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Prince Charles being received by Prof. Mohd. Amin, Vice-Chancellor, Jamia Hamdard on his visit to the university.

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Editor :
SUTINDER SINGH

Student Community in the University System

M. R. Kurup*

The student community in the university system in India has not yet become the subject matter of any serious study. An attempt is made here to raise certain basic issues concerning the student community in the university system in the context of evolving a healthy academic atmosphere and policy at the institutional level.

The university system is highly heterogeneous and consists of numerous subsystems with limited interrelationship. There are day-night and general-professional colleges, autonomous and non- autonomous university departments and institutions with or without +2 stage. Students, engaged in research, postgraduate or undergraduate studies, are also divisible on regional, linguistic, political, social, or economic backgrounds in addition to those based on faculties, subjects and goals. An important issue which one section, say the Law faculty, faces may be a totally non-issue for the Arts faculty. The highly pluralistic and segmented character of the student community has its bearing on the campus life and discipline.

Nearly 85 percent of students in higher education belong to the "general" stream in India. The transformation of a student from the school to the university brings in its wake unbelievable changes. During the school days, the relationship of the child with other members in the family or school is close with a visible (may be forced) commitment to study. But when they reach the college, particularly of general education, most of them tend to be apathetic and drift. They seem to believe that the Bachelor Degree is a mere proforma qualification, a "glorified literacy certificate", and that it does not help in moulding a career or getting a job. The consequent frustration takes a heavy toll and many of them fall a prey of divergent 'push and pull' factors from within and outside the institution.

Education has been reduced to a mere ritual of passing an annual examination, in one or multiple sitting, which in turn has resulted in mushrooming of 'coaching factories and polyclinics for tuitions' by teachers and entrepreneurs. The rapidly spreading parallel system has succeeded in eroding the role of teachers and colleges, where students appear to take things for granted. The present examination system is such that an average student is said to score passing marks if he prepares for two to three months prior to the annual examination or by merely attending coaching 'shops' offering 'crash courses' (like fast food!) for a few weeks. It is well known that preparation based on the Question Papers of the past three years could ensure a "Pass" at the university examination, which makes attending regular college lectures throughout the year redundant. Motivated criticism in the Board of Studies, Academic Council, or the Senate, will dissuade serious attempt of well intended teachers of deviating from the beaten track of the last few years. Today, a regular college is not inevitable except for a limited administrative purpose of enrolment, enjoying bus-railway concessions, freeship-scholarship and forwarding of the university examination forms. How can one prevent the growth of apathy and indiscipline, passive and active, in the circumstances?

In colleges, the relationship between the teacher and the taught is anything but close for a variety of reasons. With 120 to 150 students in a class, many of them may not even recognize each other in colleges with students strength of 5000 plus. This is particularly true of the Commerce faculty

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recent study showed that as many as seven out of eight students could not recollect the name of that year's Chief Guest for the Annual Prize Distribution in the college when asked after about 45 days! Hardly anyone uses the time for additional reading, preparing for National or State level competitive examinations, gaining some experience through part-time jobs, or acquiring employable skills. With the middle class background and the time at its disposal, the student community could have been instrumental for a lot of socially productive development programmes, such as People's Science Movement, promotion of Clean and Green Environment, or eradication of social ills like illiteracy, superstition, smoking, alcoholism, drug peddling, eve-teasing, mass copying at examinations, to mention a few. What unfortunately happens is that some of them are found to be actually abetting these evils thereby aggravating campus indiscipline.

There is no harm in picking up students with leadership qualities by political organizations, but misusing students by vested interests should be discouraged. College elections have become a nightmare of the Principal, teachers, students and the whole neighbourhood population. The formation of students council in colleges is bizarre as students who are academically inclined seldom find a place, for an element of fear is created using 'money and muscle power' to discourage fair elections. Posters and writing on the walls do not make a leader; he should be able to debate issues, identify priorities and work to attain broad objectives. Student leaders hardly attend regular lectures and tutorials thereby forfeiting the right, in the real sense of the term, to take up issues with authorities. Leadership, made up of students whose academic background is suspect, will not be able to nurture real aspirations of the young generation. It is time to fix up minimum conditions, say a Second Class Pass at the previous annual examination, to be eligible to contest at the student council elections. An elected representative shall cease to be a member of the council if his average monthly attendance of lectures and tutorials falls short of, at least, 60% for two consecutive months.

Today, students' forums play very little role in formulating fundamental academic issues, deliberations in the university bodies like the Senate, or in submitting well documented memoranda to appropriate authorities, particularly focussing the need for updating and restructuring courses in tune with the changing time, or promoting innovation at institutional level. In Western universities, syllabi do not remain the same for more than two or three semesters. The process of revision and updating starts at the close of the first semester itself. In Maharashtra, it remains the same for decades as a change is exclusively viewed from the point of finance or job-security of teachers. The process of an interdisciplinary "add-on and adaptation" is seldom found amongst the faculty members. Similarly, a mere lips criticism of the present examination system, will not solve one of the most acute problems facing universities. The students' organizations ought to have been in the forefront asking for a change, say, with a system of continuous assessment, among others.

Students alone need not be blamed for all the ills, which are multifaceted. A lot of students indiscipline is "engineered" by disgruntled elements, including some members of the management, staff, ex-students and rank outsiders, to settle past score or to prove or disprove a point. What can a Principal or a Vice-Chancellor do in the absence of an appropriate Youth Policy and a formal provision for a "students management system" with accountability in colleges and universities? There is lack of effective authority in institutions when it comes to students discipline, and therefore, most of the acts of violation of norms tend to be ignored under one pretext or the other. Even when an erring student is identified, there exists no formal counselling and curative facility or time and patience on our part, to bring him back to the mainstream. An effective formal machinery for proper student management is a prerequisite if colleges and universities are to play any meaningful role in promoting good education.

The present scenario in educational institutions is the result of an interplay of numerous factors. Large number of students go for higher education for a mere degree or fun. Many do it as there is no viable alternative to spend time on till they get married or secure job, which is not that easy under the present India conditions. There is very little link between genera education and job or real life situations. Many teacher consider regular colleges as secondary occupation or a catchment area for getting students to run benam coaching class. A combination of such factors culminates in frustration, absenteeism, resentment agains authority, and all sorts of escapades. The anarchy tha prevails in the campus is the end-product of lack 'purpose and professionalism' in education. Th present cheap education will turnout to be dear educa tion, if left unchecked.

For resolving these issues, college admission shoul be restricted to those who have a specific time-boun objective in going for higher education and others, wh are merely interested in a degree, should be diverted to tl parallel Open University system. With the applicati

(Contd. on page 1

What Should be Taught in Refresher Courses in Academic Staff Colleges?

J.N. Kapur*

Some 20 years ago the UGC launched a Faculty Improvement Programme (FIP) with the purpose of improving undergraduate education in the country. A Committee was appointed to advise the UGC and I happened to be a member of that Committee.

Two models were proposed for faculty improvement. According to the first model, the teachers were to be trained for their Ph.D degrees since it was taken as axiomatic that Ph.D teachers would be better than non-Ph.D teachers. Abut 50,000/- to 60,000/- rupees per teacher were spent and a large number of teachers got their Ph.D degrees. Some of them later left their colleges and joined university departments, while others remained behind and quite often became frustrated teachers, since they could not have the opportunity to pursue their research programme further. The second model which I had proposed was that the teachers be trained in their undergraduate subjects from an advanced standpoint, should be given better pedagogical skills and should be taught only advanced topics directly relevant to undergraduate teaching. This model was not accepted. One possible reason was that while many university professors were willing to guide Ph.D students in their own specialisation in their own interest, few felt themselves competent to undertake a type of programme which I had envisaged. After lapse of 15 years the UGC launched another excellent scheme of Academic Staff Colleges and asked them to organise orientation programmes and refresher courses for college teachers.

The programmes are excellent, but it is imperative to see that these lead to optimal improvement in undergraduate/postgraduate teaching and as such both the curricula and the methods of training in these refresher courses are very important and need detailed discussions. In the refresher courses, usually an undergraduate or postgraduate course topic is selected, some advanced topics in it are chosen and lectures in these topics are given by experts. The course taught in B.Sc/M.Sc are covered in one week and the remaining three weeks are devoted to lectures on advanced topics. For each course, there are 4 or 6 experts who give 3 to 8 lectures each and there is always a temptation for lecturers to introduce their topics of research in these lectures. Of course the lecturers are to make transition to frontiers of research as smooth as possible, but still for an average teacher, it requires a great effort. The contents of these courses are very interesting and fascinating to the experts. These are also possibly interesting to at least some of the participating teachers. But how does this improve classroom teaching? It certainly influences some teachers and they become excited teachers, but in spite of the excitement, they cannot teach the advanced topics to their students because these are not in their courses and students in general are not prepared to listen to lectures on topics which are not in their course.

The teachers cannot do research in these topics because the refresher courses are not at the research level.

Teachers are motivated to learn only those topics which can help them:

1. To improve their teaching and to teach with greater confidence and certainly,
2. To write textbooks on the subjects,
3. To do research and publish papers,
4. To participate in the discussions in seminars and symposia, and
5. To get financial advantage by learning and remembering the topics, otherwise they tend to forget whatever they are learning at a fast rate. As such the refresher course will serve the purpose best if they concentrate on undergraduate and postgraduate courses from an advanced standpoint.

The object has to be to give to teachers a deeper understanding of the topics they are teaching, to give them history and the application of each topic and the discussions of all possible critical questions on the topic.

Some of the present day teachers may not have been taught by very good teachers or even by teachers with very clear ideas. The refresher courses, to some extent, may be considered as remedial courses to make up the

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deficiency in earlier teaching. When many of the present day teachers are critically interviewed for promotions or research fellowships etc., it is found that quite often they have wrong concepts which have possibly been passed on from generation to generation. The refresher courses provide an opportunity for identifying and correcting these incorrect ideas. In the usual undergraduate teaching, there is a hurry to finish the course so that nicer details are often left out. There may be some justification for it, since students have to sit for an external examination. In a refresher course, however, there is no prescribed curriculum to be finished and no hurry to finish it somehow. These should be done at a leisurely pace with full participation on the teachers under training. There should be special motivation and questions from the participants should be most welcome. Passive lectures should be just banned here.

One criticism of the present education is that it is mainly a training in words and not in ideas, it is a training in cramming of facts for a temporary period near examination, it discourages thinking, it discourages creativity, it encourages made-easy books at the cost of text books, it makes libraries redundant. It is academic and not applications-oriented and it fails to excite students about intellectual adventures. Whatever be the truth of these, atleast refresher courses should blaze a new trail. Here, we should have free and frank discussions, prescribed reading by participating teachers, presentations, talks and projects by them, reading from current books and journals. There should be an academic climate of learning and glimpses of modern developments in individual disciplines.

The professors who give these courses should not be just narrow specialists; they should have as far as possible extensive experience in teaching the courses which the participating teachers are expected to teach, they should have wide interest in history and pedagogy of the subject, they should be good teachers themselves, and they must be able to talk at a level at which participating teachers can understand.

The lecture notes of the refresher course should be carefully prepared and should be made available to the participants. If standard books are used, they should be made available to the participants for subsequent use. The Summer Schools conducted by High Energy Physics Group of D.S.T. can be a good model. Here, professors are informed one year in advance, they prepare their notes and ultimately these notes are published in book form. The lecturers are available for most of the duration of the school and a great deal of thinking goes into the planning of each school.

In any case, the goal of these refresher courses should be clear;

- Is it to provide the distinguished university professors an opportunity to speak on their specialisation?
- Is it to give an intellectual environment to young teachers and expose them to senior university professors so that they can receive both knowledge and inspiration?
- Is it to enable the teachers to teach the present courses more effectively?
- Is it to enable to teachers to have historical perspective, to learn more about motivational aspects, to know about applications of the courses? and
- Is it to enable to teachers to study the courses they are teaching from an advanced point of view.

Did we learn any lessons from the successes and the failures of the Summer Schools organised in 1960s and 1970s and are these lessons being used in running the present refresher courses? It is hoped that an objective evaluation of the refresher course will be made sooner than later and it will be with respect to clear-cut criteria laid down in advance. Usually, there is an evaluation of every refresher course by the participants and usually the comments are favourable, since the university professors are excellent scholars and they speak with great deal of authority on the subjects they have chosen to speak on. However, a more important evaluation will be in terms of the impact which these training programmes produce on teaching by teachers, on learning by students and on creation of a climate of scholarship and learning.

Another important consideration should be whether clubbing of undergraduate and postgraduate teachers in same refresher course is useful, since the topics of the refresher course would to some extent determined by the level of teaching the participating teachers are doing or would be required to do. We may have one or more academic staff colleges specially for postgraduate teachers only, the rest should be for undergraduate teachers.

I believe the object of the refresher course should be "To revitalise undergraduate/postgraduate education in our colleges", and their success should be measured by the improvement in the quality of output of graduates from these institutions.

Development of Higher Education in India in Pre-independence Period

Nighat Ahmad*

India's higher education reflects its complex history. The roots of the system go back to ancient times when a guru imparted knowledge about the Vedas (Hindu religious scriptures) to a select group of students from either the priestly or the ruling class. This group, known as *grukula*, gradually expanded to include several masters and became a gathering of schools (*parishads*) engaged in intellectual pursuit. As these *parishads* which were Brahmin in the earlier period and later Buddhist, stabilized, residential schools evolved which included several faculties. According to some scholars these centres mark the genesis of university education in India.

One of the largest and earliest of such centres was Nalanda in Bihar which grew out of the Buddhist monastic communities known as *veharas*. As many as 10,000 students received education in subjects ranging from metaphysics to astronomy. Following invasions from Central Asia these institutes gradually lost their importance. They were, however, replaced by Muslim institutions known as *madrassas* which imparted knowledge in logic, astronomy and mathematics, all in Arabic. By the 18th century India came under the influence of Western culture and one of the earliest universities was established by the Dunes at Serampore near Calcutta in 1818. However, since it taught only theology, it had little influence on the development of higher education. The country which had the greatest impact on the Indian higher education system was Great Britain.

Higher Education System Under British Rule

By the beginning of the 19th century, British colonial rule was firmly established in India. The year 1813 is an important landmark in the educational history of India. In that year a Charter Act was passed which set aside a lakh of rupees for the education and improvement of scientific knowledge among the Indians. However, till 1833, the British were busy consolidating their hold in India and no concrete measures were adopted to promote education. All that was done was the appointment of a General Committee of Public Instruction in Bengal in 1823, another in Madras in 1826 and several years later a Board of Education in Bombay in 1840. By this time a number of small colleges came into being which trained students for middle-level positions in the colonial bureaucracy. One of the major issues to confront the colonial government was whether to implement Indian educational institutions or to promote Westernization. The choice was finally in favour of the latter. The purpose for educating Indians was neither socio-economic nor cultural advancement of the people. It was to create a low-cost manpower to run British factories and to help the government in administration.

Lord Macaulay, Law Member of the Governor's Executive Council, suggested in 1835 a detailed plan of British education in India. He recommended a system of higher education that would impart knowledge of European literature and science through the medium of English. The government's policies on higher education were designed, in Macaulay's words, to create "a class who would be interpreters between us and the millions whom we govern, a class of persons Indian in blood and colour, but English in tastes, in opinions, in moral and in intellect, " who would be consumers of British goods and provide manpower for subordinate ranks of civil service and on the other, would be loyal to the Raj. Macaulay's minute became a major guideline for the British government to develop higher education in India during the remaining period of British rule. English education was not forcibly imposed by the colonial regime. It was widely accepted by enlightened Indians as well and became a foundation stone for modern Indian education. The Indian urban elite viewed it as a means of securing jobs. It was also felt that this system of education would help remove the backwardness of Indians in the contemporary world and enable them to achieve material progress as well. The elite who were the beneficiaries of this system had a vested interest in its continuance.

In 1853 the British Parliament for the first time instituted an enquiry into the state of Indian education. A despatch from Sir Charles Wood was issued in July 1854 to Governors of the East India Company on the education policy. Sir Wood's Educational Despatch is called the Magna Carta of English education in India. It shaped the educational structure in India and covered a variety of subjects such as grants-in-aid, teacher training and education of women. It established the basic rules for founding a university system (modelled on the University of London) that would affiliate existing colleges, examine students, set standards of courses, prescribe texts and confer degrees. The universities at Calcutta, Bombay and Madras came into being in 1857. Before the end of the 19th century Indian education system witnessed the setting up of two more universities — the University of Punjab (1882, now in Pakistan) and the University of Allahabad (1887). The number of colleges by 1902 was 191.

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In 1882 an Education Commission was appointed which recommended the Government of India to bring out quinquennial reviews on the progress of education. The first such review was published as early as 1886-87. In 1900 the Secretary of State pressed upon the Government of India to have centralized direction and control of education and a post of Director General of Education was created at the Centre to advise on educational matters. Lord Curzon chalked out for the Centre an active role in coordination and policy-making. More thought was given to higher education as is evident from the recommendations of the Indian University Commission of 1902 and the subsequent University Act, 1904. The rate of growth outstripped the ability of the institutions to maintain standards. Reforms were introduced as early as 1904 with the passage of the Indian Universities Act, 1904. According to the Act the universities were required to assume more teaching responsibilities, provide research opportunities and exert greater control over affiliated colleges.

During Lord Curzon's time considerable grants were sanctioned to the provinces for educational purposes. The Act of 1904 made it incumbent on the Government of India to sanction grant-in-aid to universities to enable them to function efficiently. These grants acquired the character of permanency and advanced the cause of higher education. In addition to the regular grants, additional sums for specific purposes were also sanctioned — non-recurring grants for newly created universities. For example, in 1914-15, a grant of Rs.12,000 a year was sanctioned to the University of Bombay for instituting a chair of Economics and Sociology.

In 1913 a reform measure pressed for residential colleges and in 1915 Banaras Hindu University, a teaching and residential University without power of affiliation was founded. It was followed by the University of Mysore in 1916, University of Patna in 1917, Osmania University in 1918 and the Aligarh Muslim University in 1920. Thus the period 1870 to 1920 was one of central control coupled with a good deal of decentralization. The reforms in Government of India Act of 1919, based on Montague Chelmsford Report suggested that certain subjects should be under the control of Indians, and consequently education was placed in the provincial list. All subjects were divided into 2 lists, Central and Provincial and the latter further subdivided into reserved and transferred. Reserved subjects were administered by the Governor and transferred were under the control of Indian ministers. There being opposition to placement of education in the Provincial list certain reservations were made. Institutions which were of an all India character, like the Banaras Hindu University, Colleges for Indian Chiefs and educational institutions for the benefit of the British in India continued to be under the Centre. Education of Europeans and Anglo-Indians which was in the Provincial list, was a reserved subject. By and large education was a transferred subject in Indian hands.

From 1921 onwards, university education registered progress. The Calcutta University Commission (1917-19) also known as the Saddler Commission recommended coordination and cooperation between universities. Its report had far reaching effects on university education as a whole. As a result of the recommendations the first All India Conference of Indian Universities was held at Simla in 1924 and the Inter-University Board (IUB) was set up to represent all the universities. Dyarchy failed in operation primarily on account of lack of funds. Also, by the Act of 1919, the Centre having no control over transferred subjects, it ceased to take interest in educational matters. The Central Advisory Board of Education (CABE) which was set up in 1920 to provide provincial governments with expert advice was abolished in 1923. The Hartog Committee (with Sir Philip Hartog as Chairman) appointed in 1929 to report on the growth of education in British India, suggested that the Government of India should provide educational information, coordinate educational experiences of provinces and also provide necessary funds to provinces to make up for financial deficiencies. Consequently the CABE was revived in 1935.

By the end of the third decade of the twentieth century 9 new universities had been formed, graduate departments had been developed in a number of faculties and some universities had assumed teaching responsibilities, largely on the graduate level. However, in spite of recurrent reforms and recommendations quality could not keep pace with quantity. Also the universities control over their affiliated colleges was unsatisfactory. By the year 1947 there were 20 universities and about 600 colleges. Details of growth in higher education are given in table 1. This gives an account of expansion in the number of colleges and universities from 1857 upto Independence. The number of universities, just 3 in number in 1857 increased to 20 by 1947. The number of colleges of general education during the same period increased from 27 to 496 i.e. by more than 18 times, colleges of technical education increased from 4 in 1891-92 to 38 in 1947-48. Total enrolment of students during the same period increased from just 6000 in 1881-82 to more than 2 lakhs in 1947-48 i.e. by more than 35 times.

Table 2 gives a list of universities with their year of establishment from 1857 to 1947. The data as given in table 1 on expansion in higher education does not reflect other aspects of it. Higher education in colonial India was concentrated in metropolitan towns, especially the port towns. This was in conformity with the colonial pattern of development in general. The spread of higher education was not only extremely uneven regionwise but was inequitous too. It was more widespread among men than women and amongst the higher castes. Together with poverty and economic backwardness of the masses, it contributed to a widening of the gulf between the better off educated upper castes and the masses. Thus India inherited at the time of Independence a system of higher education which needed basic transformation to gear it to the task of building a self-reliant and growth oriented economy, a forward looking society as well as an integrated nation.

TABLE 1

Expansion of Higher Education in India (1857-1947)

Year	Universities	Colleges of General Edu.	Colleges of Tech. Edu.	Total Enrolment
1857-58	3	27	*	*
1881-82	4	68	*	6000
1891-92	5	137	4	13000
1901-02	5	179	4	17650
1911-12	5	182	4	29650
1921-22	11	226	5	45200
1931-32	14	310	7	79140
1941-42	16	422	9	118750
1946-47	18	466	16	193400
1947-48	20	496	38	215000

* Not available

Source: CPS Chauhan: Higher Education in India; UGC Annual Report, 1988-89.

TABLE 2

Growth of Universities in India, 1857-1947

S.No.	Name	Year of Establishment
1	Calcutta	1857
2	Bombay	1857
3	Madras	1857
4	Allahabad	1887
5	Banaras Hindu	1916
6	Mysore	1916
7	Patna	1917
8	Osmania	1918
9	Aligarh Muslim	1920
10	Lucknow	1921
11	Delhi	1922
12	Nagpur	1923
13	Andhra	1926
14	Agra	1927
15	Annamalai	1929
16	Kerala	1937
17	Utkal	1943
18	Dr. Hari Singh Gaur	1946
19	Rajasthan	1947
20	Punjab	1947

Source : UGC Annual Report, 1988-89.

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SYNERGOGY

Mamota Das*

Andragogy is defined as the art and science of leading adult learning or helping adults learn. Andragogy is a unifying educational process that can help adults discover and use its findings in social settings and educational situations to stimulate the growth and health of individuals, organisations and communities. The andragogy learning system uses a "feedback loop". The primary function of the teacher or facilitator in an andragogical activity is that of guiding the andragogical process itself, rather than managing the "content" of the learning as in traditional pedagogy.

In pedagogy, the principles and practices of teaching, are essential to the teacher. It incorporates the ability to plan lessons and units, to organize and manage the classroom, to use teaching strategies effectively, and to test and grade students. More specifically, pedagogical knowledge helps prepare teachers to set up the classroom for instruction, conduct lessons, adapt subject matter so that it can be understood and valued by learners of particular ages and backgrounds and lastly to encourage active learning through interactive teaching.

Synergogy provides an alternative to both pedagogy and andragogy, seeking to avoid the weaknesses of both, the role of authority in pedagogic settings and excessive reliance on the students already knowing what he or she needs to know in andragogic settings. At the same time synergogy preserves the strengths of these two approaches; the role of the expert in providing authoritative subject matter (in the form of learning designs) about the topic to be studied and the proactive involvement of the learner in being responsible for learning. Synergogy thus provides a systematic framework for approaching the problems encountered in education, training, and development.

Its four fundamental differences from other approaches involve :

(1) replacing authority figure with learning designs and instruments managed by a learning administrator,

(2) enabling learners to become proactive participants who exercise responsibility for their own learning,

(3) applying to education the concept of synergogy, in which the learning gain that results from team work exceeds the gain made by individuals learning alone, and

(4) using learners' colleague affiliations to provide motivation for learning. Specific sources of social motivation include each learner's desire to increase his or her personal effectiveness and effectiveness as a team member to collaborate with and gain approval from one's colleagues to participate in order to increase the likelihood of team success and to exercise personal autonomy in learning. Effective learning requires that the learners be motivated.

Synergogy differs from other learner centered methodologies as—

(1) Synergogy offers learners meaningful directions in the form of learning designs and learning instruments. A learning design is a format that structures the process of learning by providing a framework of orderly steps for acquiring knowledge, attitudes, and skills;

(2) it relies on team work rather than on individual or group work to enhance learners involvement and participation. Not every group is for socially constructive learning but for social environments. Synergogic learning designs distinguish between a group and a learning team; and

(3) in synergogy concept, under certain conditions the whole can be more than the sum of its parts.

Synergogy presents designs for organizing learning environments so as to avoid conditions that decrease motivation for learning and to provide situations that reinforce individual's desire to learn by helping one another. The synergogic designs for enhancing learning are

(i) The Team Effectiveness Design (TED),

(ii) The Team Members Teaching Design (TMTD),

(iii) The Performance Judging Design (PJD), and

(iv) The Clarifying Attitudes Design (CAD).

**Professor & Head, Department of Education, Annamalai University, Annamalainagar-608002.*

In Team Effectiveness Design (TED) each of the team's learners assesses his or her knowledge prior to team discussion. Acquiring knowledge is through mutual deliberations.

In Team Members Teaching Design (TMTD) participants are responsible for learning assigned portions of the subject matter and teaching it to others. Once each member's part is fitted with the others, the entire body of knowledge is known to all. Teaching is done by team's members and not team teaching where two or more instructors share responsibility for a group of students. Here acquiring knowledge is through presentations by team members.

Performance Judging Design (PJD) is useful for classes in which learners are to acquire practical skills. Developing skills is through criterion based critiques.

The Clarifying Attitudes Design (CAD) is for social emotional learning. This design enables learners to discover whether their attitudes have a sound basis in available facts, data and logic.

Synergogy has future directions for education, training and development and is applicable in schools, colleges and universities and also in business settings.

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Student Community in the University System

(Contd. from page 3)

of modern educational soft-skill and technology, including the audio-visual backup, the Open University system has the potential to emerge as an effective alternative to the formal system. Similarly, the ATKT system should be abolished and students who fail in more than two subjects at first or second year annual examinations should be automatically diverted to the Open University stream of the respective universities. Alternatively, colleges may be permitted to set up a Department of Distance Education, for catering to the Fail and ATKT students. The courses must be restructured and periodically updated to bring in at least 25 percent "applied or skill components" in all subjects. Purely theoretical and traditional subjects may be restricted to a few reputed institutions, and new colleges be permitted only with subjects that help improve employability or self-employment.

There is a need for evolving institutional goals and it should be the endeavour of the management and the faculty to achieve them. The institutional goals and the aspirations of students seeking admission therein should match. Equally there is a need for introducing accountability – individual, institutional and social – in education, with a regular monitoring and feedback system to assess students-faculty performance per unit of time. We must be able to know what the society at large expects of the academic community, consisting of principals, teachers and students, to be doing. As the most senior, though often vulnerable, partner in the community, are the Principals, with vast academic, administrative and public relations experience, in a position to carry out fully their responsibilities? Why blame the student community for indiscipline when every one of us – the university, management, principals, teachers and the students – has a chance to play the ball? The degree of indiscipline may vary from institution to institution and from time to time, but it is a serious and important problem, needing an institutional policy. The University Grants Commission and the National Institute of Educational Planning and Administration should address themselves to these issues and take steps to bring home the need for a better academic commitment among the students. No meaningful process of human resource development in the country is possible without an academic policy for youth becoming its integral part.

GOING GLOBAL

"By a single step, our leaders have connected our technologies and industries globally, and have challenged the nation to become competitive globally", said Dr. V. S. Arunachalam, Scientific Adviser to the Deference Minister and Secretary, Department of Defence Research and Development, Govt. of India, while delivering the Convocation Address at the 41st convocation of the University of Roorkee. "As we were insulated from global competition for all these decades and as the Indian market was closed and protected, our industries paid little attention to standardisation, quality control and reliability.......The result: stunted production and substandard products. We can get over this problem only when our young graduates move to areas of creative work and perform there", he added. Excerpts

India is now a full fledged industrial power, though not as big as we would like her to be, but still a major one. We pride ourselves with many achievements to our credit in various fields of engineering from building dams and canals and thus networking the country's rivers, to networking our communication systems through satellites stationed somewhere in space. In a similar vein, we can talk of our steel plants, heavy industries and of our harnessing the power of atom for peace. While we can be rightfully proud of our achievements, the tasks ahead are large and daunting. Paraphrasing the poet Robert Frost,we have miles to go before we sleep; no wonder this thought was overriding in Pandit Nehru's last scribble. The responsibilities provide challenges and opportunities to all of us. While the start can be that of a mere job opening, it should quickly turn into a labour of love : for engineering is as stimulating as any creative human intellectual endeavour. In one important respect, our country is in a more fortunate position today than many other parts of the world which are reeling under recession and unemployment : the employment opportunities for our engineers continue to be high and they are sought after in some emerging areas of technology.

The early years of engineering in India were somewhat easy as major reponsibilities and direction were given by a colonial master. Technologies for that day, though new to India, were well known and practised in other countries. Whether it was the setting up of the railway system in India or building up of Ordnance factories for the Army, the experience of British engineers was readily available. Their major equipment and hardware came from England; railway engines, factory machines and even simple structures were all imported. We were only asked to integrate and complete the programmes under the command and control of the British engineers. In spite of a lack of total responsibility, many of our engineers blossomed and pioneered the engineering development of India, building steel plants, locating hydroelectric stations and establishing many new industries. We only have to look at engineer-statesman, like Bharat Ratna Vishweswarya, or visionaries, like Jamshedji Tata, to appreciate that how forward-looking were some of our citizens then. When the British merely wanted us to walk, we often ran, and ran well.

In spite of these achievements, when India became independent she was still a pastoral country with modest industrial production. It was only during the post-independent years, our political leaders laid the foundation for a strong industrial India. Large steel plants, major dams and irrigation projects, fertilizer plants, heavy electricals were all conceived and executed in the first few decades after independence. It is this vision that is helping the country march forward today. Without this infrastructure; we would have been ill-equipped to meet the challenges of industrialisation and growth. In spite of these achievements, our growth in many areas has been modest : our annual steel production is the same as that of a small country in Europe; our consumption of electricity is abysmally low, and even now we allow many rivers to flow to the oceans untapped and unused. We have not only these gaps to close, but also to perform more because of the growth in our population.

But technology has not remained still, waiting for us to catch up. There are many new areas with opportunities, some of which are in the realm of science fiction! Our understanding of the nuclear structure, or of the behaviour of electrons in solids and of knowing the basic architecture of human gene are all competing to provide new technologies, some for immediate and many for future applications. In many developed countries of the world electricity produced from nuclear power constitutes a very large fraction of total power produced; microelectronics brought in by semiconductors is revolutionising communications, information and data processing and storing through computers and entertainment industries. Some genetically manipulated drugs are already available and more are to come. In spite of these spectacular achievements, we are conscious that we are tapping only the surface of these technologies. With better materials and increased understanding of our own self, as in our understanding of the human brain, it is possible to expand to areas which we never thought of before. For instance, if the Green Revolution of the past decades was due to a better variety of seeds brought in by genetic mutation, efficient fertilizers and powerful pesticides, the coming decades may perhaps show that biotechnology is capable of eliminating hunger from the face of this earth by abundant and well distributed production of food. It is as well these are around, for we will have a large population to reckon with in an over-developed land.

But technology does not appear to be an unmixed blessing to society. There are some issues which have to be debated and a consensus arrived at, and I cannot think of a better forum to raise these than here. In my view these issues are important in planning for the future industrial growth and welfare of our people; more, these are important issues for our planet Earth as well. The first concerns the role of technology itself. About 200 years back there was a movement in England by a group called Luddites who came out protesting against industrialisation. They felt that industrialisation was artificial and against Nature and must therefore be fought. While we may dismiss Luddites as a singularity of that period, it is time for us to contemplate whether the Greens, the Luddites of today, have some special messages for today, such as warning us of uncontrolled and uncaring growth of technology. Often, as these are complex, we tend to be only too ready to criticise engineers and technologists for many of the perceived problems such as our endangered environment. The statistics tells us that today we are consuming our non-renewable natural resources far more greedily than the earlier generations, threatening to destroy some of the fragile resources for ever. These, in addition, pollute the environment, increasing the carbon dioxide emission with its attendant global warming. There is also the accompanying concern on the destruction of ozone layer on top of the atmosphere which protects us from unwanted ultraviolet radiations. There is no doubt that both are man-made and it is difficult today even to evaluate the damage done and also assess the effectiveness of the remedial measures. There are many investigations going on, to find out whether the damages are irreversible. This makes it necessary for us to control ourselves from producing more CO. Unfortunately all fossil fuels are responsible for this pollution and it is therefore difficult to control this : the only option may be cutting down of electricity production, vehicles and other transportation systems unless they use non-fossil fuels. Easily said, than done. No country will be willing for this sacrifice, specially developing countries like China or India who have large resources coal and are still to climb up on electricity production or vehicle usage. The developed countries are reluctant to abandon this cheap resource and are unwilling to invest in costly alternatives. No country will deliberately reduce its standard of living or comfort unless it is forced to abide by internationally enacted regulations. We must nevertheless plan for such global agreements, taking into account the concerns of developing countries like India which need these resources badly. Alternate technologies may even turn out to be costly at least in the short run and the developed countries which have until now enjoyed the benefits of the technologies unchallenged, and have sound scientific and technological base must help in finding new ones which do not pollute the environment. The case of Ozone layer in still complex as there is no universal agreement on the reasons responsible for it. Chloroflurocarbons (CFC), which are refrigerants, are supposed to be responsible for this destruction. The only way will be to find some substitute for CFC and make it mandatory for applications which involve the use of CFC. Even here the developed countries have a responsibility, for the developing countries have used these gases minimally because the use of refrigeration itself is a sign of affluence. Developing, or developed, we all have a responsibility to protect our planet from ecological disaster. This may even call for voluntary control on industrialisation and initiation of international technological programmes to develop alternatives. We must all be prepared for these challenges in the coming years. Meanwhile, there are many steps our country can take unilaterally like protecting the forest cover and preserving the fragile ecological systems operating in many parts of the country. Human needs must never be substituted by greed and our society must be willing to pay the price for going for alternatives and to look for substitutes. Not every part of the country is robust enough to stand the rigors of industrialisation and growth. Even now there are instances of countries willingly abandoning the harnessing of some technologies, and we must respect such choices.

I want to touch upon another aspect concerning the harnessing of technology in our country. This issue has become rather urgent, as our country, through its new industrial and economic policies, is looking for growth through improved production. Our political leaders tell us that we will come out of the present difficulties only through improved production and export. By a single step, our leaders have connected our technologies and industries globally, and have challenged the nation to become competitive globally; a seemingly tall order today. What is wrong with our technologies and our products? Frankly speaking, not much. As we were insulated from global competition for all these decades and as the Indian market was closed and protected, our industries paid little attention to standardisation, quality control and reliability. As the market demand was limited to meeting local needs, our industries did not pay much attention to optimising processes so that we could be competitive. As there was not much competition, there was no need for innovation. Our industries and the products thus became part of the high-cost economy. The government has intervened by devaluation so that our products will become cheaper. I submit that this alone is not adequate. We may have to intervene through technology: by standardisation and innovation. For this, we may have to pay greater attention to design and to all the industrial processes that go with it. It is possible only if our engineers move to the design offices and shop floors. Until now, I regret to say, most of us confined ourselves to office chairs and allowed others to decide on various issues regarding quality and production; unfortunately, others are not qualified to deal with such issues. The result : stunted production and substandard products. We can get over the problem only when our young graduates move to areas of creative work and perform there. Our successes in the Atomic Energy, Space and Defence Research programmes are in a large measure due to our young graduates taking charge of activities that call for creativity and engineering flair. We must extend this to all other areas as well. Part of the challenge is on innovation. Growth of this area was stunted as there was no need for innovation in a captive market. Even the original designs were imported as a part of foreign know-how. We must overcome this problem of a lack of indigenous design capability by integrating all the available manpower in the country and setting them challenging targets. Qualified designers may reside at universities, or work at national laboratories, or industries. We must learn to integrate their expertise and work for a time and cost bound, well defined targets. This can indeed be done as we have seen in some of our defence research programmes. These may again call for some restructuring of our existing institutions making them more flexible for such interactions. Even these we are attempting in our defence organisations. We must accelerate all these activities, for these are better interventions to make our industries rejuvenated and competitive than mere fiscal measures like devaluation and decontrol.

When I look at some of these challenges, I feel inspired. Our schools, colleges, universities and our entire educational system must take note of the emerging opportunities and adjust our system of teaching and training accordingly. These tasks are nothing short of a revolution. Many countries had faced such challenges before; in the past, England, Japan and even lately Korea had to alter their societies to respond to challenges thrown at them through industrialisation. I am confident that we shall also rise to the occasion to make India an industrially competitive, environmentally friendly and socially caring society. Only then, will the job, of the engineer be done.

University of Roorkee

Extracts of the Report by

Dr. H. C. Visvesvaraya, Vice-Chancellor

The Academic Programmes

The university runs its Undergraduate, Postgraduate and Research Programmes leading to the University degrees of B.E./B.Arch., M.E. and Ph.D. respectively in various disciplines. The University continued its efforts towards achieving excellence in its activities in various disciplines of teaching. Various courses and their curricula were reviewed to harmonise them with the rapidly advancing scientific and technological knowledge keeping in view the needs of the country. The number of Postgraduate courses run by the University stood at 50.

The University has a vibrant research programme in different disciplines of Science and Technology. In its Ph.D. programme 88 scholars were admitted during the year under report. This year, 68 research scholars are being awarded the Ph.D. degrees. The students registered in Postgraduate and

Doctoral programmes is 1519 out of the total student strength of 2934. The remaining 1415 students pursued their Undergraduate programme.

Departmental Profile

The Department of Architecture and Planning conducted Q.I.P. Summer Course on "Hill Architecture" and its faculty members participated in the National Architectural Design Competition and received awards.

The Department of Bio-sciences and Bio-technology has been recognised by the Department of Biotechnology (DBT), Govt. of India for Postgraduate education and research in the field of Bio-technology.

The Department of Civil Engineering organised an International Conference on "Environmental Planning and Management" and a Symposium on "Experimental Determination of Wind Loads on Civil Engineering Structures". The prestigious "Agra Heritage Project" sponsored by U.S. National Park Service Scheme was completed. The Department signed a Memorandum of Understanding for collaborative programmes with the Govt. of Iran.

Ministry of Human Resource Development, Govt. of India, has sanctioned grant for the setting up of a Centre on 'Computerised Industrial and Process Control' in Chemical Engineering Department.

Funds for important research projects relating to 'Utilization of Solid Waste Material', 'Extraction of Chemicals from Plants and Compounds of Medicinal Importance' etc. have been received by the Department of Chemistry.

The Department of Continuing Education organised 24 Refresher courses in which 274 engineers/scientists participated.

The Department of Electrical Engineering has joined hands with the Research, Designs and Standards Orgnaisation of the Ministry of Railways in conducting theoretical studies and field trials aimed at evolving newer designs of electrified railway system for attaining the targeted train speed of 200 Km per hour. Further, the Department made effort in popularizing education in Biomedical Engineering by developing model syllabi for a 4-year degree course in Biomedical Engineering.

The Department of Electronics and Computer Engineering developed a 'Printed Circuit Board Laboratory', and 'Anechonic Chamber' for antenna measurements. The Department also developed fabrication facilities for hybrid Micro-electronic circuits.

In the Department of Earthquake Engineering, for the first time in India, a three-storeyed, base isolated, one third scale brick building model was tested on the Shake Table facility.

The Department of Hydrology successfully conducted its 19th International Postgraduate Hydrology Course in which 24 participants from India and abroad participated. The Department also conducted two refresher courses in the field of Ground-water Hydrology.

U.G.C. recognised the Department of Mathematics for its Special Assistance. The Department of Mechanical and Industrial Engineering has been sanctioned grants to initiate activities on the 'Product Development'. An All India Seminar on 'Automated Manufacturing Systems' was also organised by the Department.

The Department of Metallurgical Engineering has developed high temperature Oxide Dispersion Strengthened Super Alloy through a new cost effective technology. Also, the Department has passed on a new technology for the manufacture of stainless steel bellows required for process control equipment. An industrial enterprise has already started production of these for the first time in India resulting in saving of foreign exchange.

The Institute of Paper Technology of the University of Roorkee, located at Saharanpur, conducted a 6 weeks course on 'Pulp and Paper Technology' for engineers from Tanzania and Thailand. The M.H.R.D., Govt. of India, sanctioned grants for the modernisation of its laboratories and workshops. University of Quebec, Canada offered fellowships to the Institute for Doctoral and Post-doctoral works.

U.G.C. renewed grants to the Physics Department under CONSIST Scheme. The Water Resources Development and Training Centre (WRDTC), successfully conducted its WRD and WUM programmes in which 74 participants from India and abroad participated. The curriculum of WUM has been changed and it is renamed as 'Irrigation Water Management'; and the Ford Foundation provided grants for this purpose.

The Research Centres

The 14 Centres of Research of the University continued to perform well. The Department for Non-conventional Energy Sources (DNES) has appointed Alternate Hydro Energy Centre as its technical consultant for techno-economic evaluation of small hydro projects proposed to be funded by the World Bank.

The Roorkee University Regional Computer Centre continued to give its services to its users. The University Science Instrumentation Centre (USIC) strengthened its sophisticated instrumentation, and also designed and developed the hardware and software for these instruments. A workshop on EPMA was also organised by the Centre.

The Centre of Transportation Engineering has been recognised by UGC and GOI for interaction with different foreign universities. Also, it has been recognised for advance co-operation in codes and specialisations.

This year 11 new Research Schemes were also sanctioned to the University.

Social Obligations

The University of Roorkee was one of the first organisations which rose up to the occasion and provided all the necessary help available at its command and tried to form a nucleus at Roorkee, to provide assistance to the victims of the October 1990 earthquake devastated areas of the Garhwal region. The teams of staff and students visited inaccessible areas and took active part in relief operations.

Also, the University actively participated in the Adult Literacy Programme.

The Vishwavidyalaya Adarsh Balniketan which was started in 1956 as a Nursery has now grown to be a Secondary School.

The 'School for the Deaf' is making necessary progress. It is hoped that it will develop into a centre for teaching and research for the handicapped children.

The Mahila Works Centre became the Mahila Work and Welfare Centre during the year when its formal constitution was drawn up and implemented during the year; it continued to work through its job-oriented professional training programmes to meet the needs of less privileged women.

ALI YAVAR JUNG
NATIONAL INSTITUTE FOR
THE HEARING HANDICAPPED
AYJNIHH
K.C. Marg, Bandra Reclamation, Bandra (W), Bombay-400 050.

ADMISSION NOTIFICATION

An autonomous institution of the **Ministry of Welfare,** Govt. of India, invites applications for admission to the following courses:

i) **B.Sc. (Audiology & Speech Rehabilitation) Three Years** affiliated to University of Bombay and conducted at AYJNIHH, Bombay. Eligibility : P.U.C. or H.S.C. (10 + 2) with English, any other Modern Indian Language, Physics, Chemistry, Biology, and any other subject. [Proposed to start at Delhi, Calcutta & Hyderabad subject to approval of local Universities. Eligibility : Pass in 10 + 2 with PCB or PCM subjects].

ii) **B.Ed. (Deaf) at Bombay ; B.Ed. (HI) at Calcutta and B. Spl. Ed.** one year programme at **HYDERABAD** under affiliation to Universities of Bombay, Calcutta and Osmania respectively (for Osmania University course entrance test will be held). Eligibility : Degree in any discipline.

iii) **Diploma in Communication Disorders (DCD) One Year** programme conducted at Bombay and Training Centre Delhi. Eligibility : P.U.C. or H.S.C. (Science) (10+2).

iv) **Diploma in Education of Hearing Impaired (H.I.)** One Year conducted at Training Centres at New Delhi, Calcutta, Hyderabad, and Allahabad. Eligibility : P.U.C. or H.S.C. (10+2).

v) **M.Sc. (Audiology & Speech Rehabilitation) Two years** under affiliation to University of Bombay at NIHH and proposed to be introduced from 1992-93 subject to clearance of University. Eligibility : B.Sc. in Audiology and Speech.

vi) **M.Ed. (H.I.) One year** under affiliation to Bombay University proposed to be introduced from 1992-93 at NIHH Bombay subject to clearance from University. Eligibility: At least IInd class in B.Ed.(Deaf) or B.Ed. with D.Ed. (Deaf) with 2 years experience in teaching the deaf. Age not exceeding 40 years.

For further details with regard to admission, number of seats, Hostel, Training allowance etc. and for prescribed application forms contact **Academic Cell, AYJNIHH, Bombay** at the above address alongwith a crossed **Demand Draft of Rs.30/- (Rs.20/- in case of SC/ST on production of certificate from competent authority)** drawn in favour of **"The Director, AYJNIHH" payable at Bombay and a self addressed stamped envelope (if requested by post) of Rs.4.00 of size 23x16 cm. CASH IS NOT ACCEPTED.** Last day for issue of application is **2nd May, 1992**. Last day for submission of completed application is **30th May, 1992.**

Candidates applying for B.Sc.(ASR)/M.Sc.(ASR)/M.Ed.(H.I.) course and appearing in qualifying examinations in April/May 1992 should also apply within the last date. However, they are allowed to submit their marks before 12th June, 1992 for B.Sc. and 10th July, 1992 for post graduate courses.

DATA PREPARATION AND COMPUTER SOFTWARE FOR THE DEAF

Applications are invited for one year course in Data Preparation and Computer Software from deaf Men & Women between 18 to 30 years age having hearing loss of more than 70 dbs in the better ear and having passed 12 std. with Science/Commerce subjects under 10+2 system. The course is expected to be affiliated to NCVT, New Delhi. If affiliation of NCVT is not received Certificate will be awarded by NIHH. Stipend based on monthly family income is payable as per rules. No hostel accommodation is available. **Application** on plain paper with details of Name, Age, Sex, Date of Birth, Qualification (SSC onwards), Father's Name and Address, whether belongs to SC/ST, Certificate of Degree of hearing loss, Extra Curricular activities etc. and 2 passport size photographs **should be sent to the Director, AYJNIHH on or before 30th May, 1992.**

……

Applications not accompanied with required certificates or incomplete and received after the last date are liable to be **rejected**.

Seats are reserved for SC/ST/DT/NT, as per government rules. Please mention on the envelope **"Application for Admission**________________ course".

Refresher Course in Economics

The Academic Staff College of Pondicherry University recently organised a Refresher Course in Economics. The course was inaugurated by Dr. Har Swarup Singh, the Lt. Governor of Pondicherry. Prof. A. Gnanam, Vice-Chancellor, presided over the function.

In his inaugural address Dr. Har Swarup Singh expressed that Economics Education in India had made significant strides in the post-independence era. Courses like this had the special power of refreshing the knowledge of teachers and thus enabling them to play a vital role in the fields of education, economics and research. He aptly quoted the Education Commission of 1964 wherein it has been mentioned that the destiny of India is shaped in her classrooms and teachers are the fulcrums in this regard. He emphasised the importance of experiential learning as against rote learning. He also stressed the need for keeping oneself up-to-date in one's field. He felt sad that many even after obtaining their Ph.D. degrees did not know the names of important international journals in their fields. Many publications and research articles were flooding the field day by day and teachers should be in touch with them always, he added. He also wanted that the curriculum should be modified by adding more and more but at the same time not sacrificing anything. He requested all the teachers to specialise in a particular area but without giving up the basics. Economic world was becoming more and more complicated, he opined and said Economics teachers should try to create an Indian outlook while deciding economic and fiscal policies. He concluded by emphatically pointing out that the refresher course in Economics should keep the participant teachers to become more conversant with new ideas and should transmit knowledge in teaching methodologies and teaching techniques.

Prof. A. Gnanam in his presidential address called upon the Economics Teachers to help the country to develop in the right direction. He mentioned that a quiet revolution was emerging in the economic sphere and Economics was touching the pulse and heart of everyone. We should become an economically advanced nation. He also remarked that our politics instead of revolving around emotions should revolve around Economics. Politics should be focussed towards economic development.

He concluded by saying that the Refresher Course should not end up by adding something more to the already existing traditional knowledge of economics amongst the participants. It should enable the participant teachers to generate enthusiasm among the students so that they could contribute to the economic development of our country rather than making them mere theoreticians.

Dr. M. Ramadoss, Professor & Head, Department of Economics, was the coordinator of the course. He structured the course with special emphasis on Micro Economics, Marco Economics, Quantitative Techniques, Developmental Economics, Economics of Education and Health and Environmental Economics.

29 participants drawn from different States participated in the programme.

Meet on National Curriculum Framework

A two-day Meet on the national curriculum framework for higher secondary stage of education was recently convened by the National Council of Educational Research and Training (NCERT). The Meet stressed the need for introducing semester pattern at the higher secondary stage of education. It also stressed that the curriculum framework for the higher secondary education would be an integral part of the national system of education.

In his opening remarks NCERT Director, Dr. K. Gopalan, said since the curriculum framework was to be fully contemporary and nationally acceptable, total involvement of all the organisations including parents and teachers would be vital.

The two-day conference considered the draft prepared earlier in 1988 as also the changes that had taken place on the education scene since, besides discussing several other issues relating to higher secondary education.

The conference emphasised that semesterisation of higher secondary education would envisage splitting the two-year course into several units and giving great emphasis to internal evaluation after sufficient orientation and training of teachers and other functionaries of the educational system. This would help in assessing the performance of students continuously and awarding grades at the end of each unit. This in turn would help the students to accumulate grades through the years.

The conference felt that continuous comprehensive evaluation and accumulation of grades of students would help in doing away with the trauma of end-of-the-course evaluation as reflected in the public examinations that is presently in vogue.

In order to ensure that these recommendations are put into practice effectively, without any misgiving to any section of the society, the meet suggested that intensive guidelines may be prepared for discussion by all the boards of higher secondary education in different States. At the second stage, regional seminars are to be organised involving not only educationists and educational administrators but also parents, teachers and other interested groups, so that the implementation is smooth.

Based on the suggestions emanating from the State level and regional level meetings a coordination group, to be set up by NCERT, would develop the final draft of the framework so that a national concensus could be evolved on a national framework.

Since the thrust at the higher secondary stage is towards semesterisation, there would be no rigid compartmentalisation of academic and vocational streams. Generally speaking, the academic stream would lead students to higher studies and the vocational stream would help students to take up employment in the organised sector or opt for self-employment. It may be added that students opting for vocational courses would be offered a strong general foundation course to include study of languages and of society, besides courses on content related to the vocational course.

The meet was attended by a cross section of educationists and educational administrators including Vice-Chancellors, Chairmen and representatives of boards of secondary and higher secondary education including CBSE, representatives of SCERTs, Kendriya Vidyalaya Sangathan, National Open School.

Need to Reorient Medical Education

Medical colleges in the country should make their curriculum more flexible to take care of the local problems to achieve equity in health care, said Dr. S.D. Sharma, Additional Director-General of health services, while inaugurating a two-day workshop on medical education technology development in Hyderabad recently. Dr. Sharma stressed the need to reorient medical education to make it more responsive to the contemporary social and environmental problems.

He said the medical education system had a major role to play in achieving the broad objective of heath for all by the end of this century and in implementing other health development programmes.

He suggested that medical colleges should shift their emphasis from curative aspects to the preventive ones and dispense with redundant methods of education.

Listing out the challenges before our health care system, he said there was a pressing need to increase the coverage of population under various health programmes and to understand the changing pattern of morbidity and mortality rate in the country.

Referring to the phenomenal growth of medical colleges in the country, he said the annual intake of students in various colleges throughout the country had crossed the 50,000-mark while it was less than 1,500 at the time of independence.

Outlining the objectives of the workshop, organised by the Andhra Pradesh University of Health Sciences with assistance from WHO, the Vice-Chancellor of the University, Prof L. Suryanaryana, said the aim of the workshop was to set up Medical Education Technology Development Centre to cater to the needs of teaching faculty of medical colleges in the State.

Seminar on Indian Women

The Department of Kannada, University of Bombay, in collaboration with Kannada Vanitha Samaja, Bombay, recently organized a Seminar on "Indian Women : a perspective". The seminar was inaugurated by Dr. M.D. Bengalee, Vice-Chancellor, University of Bombay, while Dr. Jyothi H. Trivedi, former Vice-Chancellor of S.N.D.T. Women's University presided.

Dr. Bengalee in her address applauded the achievements of Indian Women in all spheres of life especially in post-independence period on the one hand, and anlysed the factors responsible for their low proficiency graph on the other.

Dr. Trivedi, in her concluding remarks observed that though women in urban areas enjoyed healthy academic and professional environment, the condition of their counterparts in rural areas was still not very encouraging.

The papers presented at the seminar included (1) Women and

Science, (2) Women and Journalism, (3) Women and Society, (4) Women and Literature, and 5) Women and Culture.

Prince Charles Visits Jamia Hamdard

During his visit to India Prince Charles of Wales along with Rt. Hon. Lynda Chalker, British Minister for Overseas Affairs, Mr Nicolas Fenn, U.K. High Commissioner to India and Dr L.M. Singhvi, Indian High Commissioner to U.K., paid a visit to Jamia Hamdard University and its associated hospital. Prince Charles showed keen interest in the work and contribution to the development of Unani system of medicine by Hakeem Abdul Hameed, Founder and Chancellor of the university. It was pleasant surprise for him to know that Hakeem Saheb had treated more than 6 million patients. He sought information regarding the medicines developed by Janab Hakeem Abdul Hameed Saheb like Ajmaloon for controlling Hypertension and Jigrine for Hepatitis.

Prince Charles found uniqueness in the systematic effort put in by the university to co-relate traditional system of medicine with the modern scientific technique and methodology.

Prince Charles visited three major laboratories Bio–technology, Tissue Culture and Elementology. The professors of the university explained to him how the herbal and natural products were processed by the modern techniques and also described the theoretical background of co-relation between ecology health and disease.

Prof. Mohd. Amin, Vice-Chancellor, presented to His Royal Highness a set of four volumes of works of Ibn Sina translated and edited under the supervision of Janab Hakeem Abdul Hameed Saheb and also two books authored by Janab Hakeem Saheb.

Chinese Delegation Visits NCERT

A nine-member Chinese delegation headed by Mr. Li Tieying, Minister of the State Education Commission of the People's Republic of China recently visited the National Council of Educational Research and Training (NCERT). The delegation held discussions with NCERT Director Dr. K. Gopalan and senior faculty members. Envincing keen interest in the work of NCERT in areas like research, training and development work, the Chinese delegation suggested that NCERT and China might cooperate in all these areas of work for mutual benefit.

Mr. Li Tieying said that several institutions in China were engaged in programmes meant for school-level education, similar to the ones undertaken by NCERT under one roof.

The Chinese delegation also went round the NCERT's Central Institute of Educational Technology (CIET) and had a look at the facilities created for production of educational audio and video programmes.

M. Arch Course

A master's programme in architecture with specialisation in "urban design and group housing" is proposed to be started at the College of Architecture, Chandigarh. According to the Principal, Dr. S.S. Bhatti, the course has been approved by Panjab University on the recommendation of high-level committee which looked into the matter.

The M.Arch programme, he said, is to be undertaken by researching into the problems of architecture, housing, urban and environmental design.

Vedic Teaching

The Uttar Pradesh Government is reported to have decided to include teaching of the Vedas in the curriculum. Special emphasis will be laid on Vedic science and mathematics along with modern science. This was revealed by Mr Raj Nath Singh, State Education Minister in Allahabad, recently. The government is also considering the introduction of subjects based on Indian heritage, he said.

Need for Skill-oriented Courses

Prof S.K. Khanna, Vice-Chairman, University Grants Commission (UGC), called for a review of the first degree stage of education and modification of the curricula by including skill-oriented courses such as creative arts, music, commercial art, and hard technology and management courses. He was delivering the Dr. Ramalinga Reddy Memorial Lecture under the auspices of the Radhakrishnan Institute for Advanced Study in Philosophy in Madras University. Prof. Khanna said a good number of mediocre science graduates were being turned out by the universities and colleges and to tackle this a strategy was required. He also drew attention to the wide range of regional imbalances in the higher education sector. "Efforts to establish linkages between undergraduate programmes and the economic activities relevant to the local needs cannot be postponed", he added.

Prof. Khanna said university-based research was cost effective and time-bound and industry, research laboratories and universities should function in coordination. Flexibility in course content, in transfer of credits, and in examination system were all needed for this to happen. Referring to the migration of students to foreign countries, he said, it would be unwise to say they did not love their motherland. "Perhaps, we need to debureaucratise our system".

Prof. Khanna made suggestions for a common undergraduate programme for one year out of the three years of the course, a reliable evaluation system, a suitable mechanism of inter changes from formal to non-formal education through the award of credits, and alternate sources for funding research in universities. He underlined that the management structure of the country's higher education system required serious reappraisal, and decentralisation should be adopted. "Incentives to individuals and institutions must be linked to the output".

Dr.(Ms.) Radha Burnier, President, Theosophical Society of India, released a special number of the Indian Philosophical Annual on this occasion while Dr. S. Sathikh, Vice-Chancellor, presided over the function.

RV for Overhauling Education

Addressing a meeting at the Dayalbagh Educational Institute (Deemed University) in Agra, the President, Mr R. Venkataraman, advocated drastic changes in the education system to inculcate moral values and a sense of sacrifice among students. He said material comforts alone did not bring real happiness as people in affluent countries of the west had found. The philosophy of the east enjoined people to practice sacrifice and develop moral values as a way to gain happiness.

He noted with regret that education in India was still guided by the British system which had become irrelevant in prevailing Indian conditions.

Mr Venkataraman praised Dayalbagh university for fostering a truly academic atmosphere and emphasising on moral teachings and dignity of labour.

Dibrugarh Varsity Convocation

Delivering the convocation address at the Dibrugarh University the Vice-President, Dr. Shankar Dayal Sharma, said that the universities in NE region should receive all infrastructural and financial assistance without any let and hindrance so that the apparatus of higher education was properly built and local people of this part of the country were enabled to fully participate on the task of national reconstruction and build a better future. He said that induction of higher education was more necessary in comparatively backward region, if social and economic changes were to be achieved.

Dr. Sharma said that such development would however be possible only if the authorities at the State and Central levels coordinate efforts to achieve specific results in a time-bound framework.

The Vice-President urged the North Eastern Council (NEC) to review the requirements of University education in the region and make definite recommendations to Central and State authorities for appropriate action.

"Development of university education in the country, ought not to be measured by the progress achieved in leading institutions in the cities but in terms of output of universities established in backward regions, where induction of higher education was necessary for economic changes. This needed a joint effort from both the State and the Centre", he said.

University education, he said, ought to develop a 'universal viewpoint' enabling the recipient of such education to integrate himself with the environment to make a creative contribution to society.

The Vice-President urged the University authorities to help achieve literacy for the entire State as several other States were witnessing tremendous drive towards achieving full literacy in keeping with norms of the national literacy mission.

Dr. Sharma said that the university could also make an effective contribution in the work of promoting traditional skills as the North-Eastern Region had tremendous potential in this regard. The students and teachers on their part could organise village surveys to assess the range and potentials of traditional skills and crafts.

The Governor, Shri Loknath Misra, who is also the Chancellor of Dibrugarh University, asked the Government to set up a Regional Centre of the UGC at Guwahati.

The Chief Minister, Shri Hiteswar Saikia, who also attended the function assured that the State Government was fully aware of the need for development of education from the primary stages to university level. 'A society marked by illiteracy cannot lead to balanced development and this situation, if allowed to continue, will only widen the gap between the haves and have nots', he said.

Shri Saikia said that the Government was not complacent about the level of development in the field of education and would endeavour to extend the basic facilities for education to every village.

With the setting up of the proposed Central Universities at Barak Valley and Tezpur, the scope for higher education will be further expanded in the State, Shri Saikia added.

The Vice-Chancellor of Dibrugarh University, Dr. Kamaleswar Bora, felt that 'too much emphasis on general education has led to unemployment'. 'Unless we restructure our education and divert 50 percent of the students to technical and professional education after their 10+2 stage, as recommended by the Kothari Commission and the National Education Policy (1986), problem of unemployment would be further complicated in the days to come', he said.

Education, both in the graduate and postgraduate level should be restructured to maintain the standards of excellence, Dr. Bora said.

News from Agricultural Universities

Thrust Areas for Agricultural Development

Dr. V. Rajagopalan, former Vice-Chancellor of Tamil Nadu Agricultural University recently addressed the scientists of Tamil Nadu Agricultural University on the newer thrusts in agricultural research and educational strategies to meet the challenges of the farming community at large. Dr. S. Jayaraj, Vice-Chancellor, presided over the meeting.

Complimenting the progress made by TNAU in the spheres of agricultural education, research and extension education activities, Dr. Rajagopalan underlined the vast potentialities existing in horticulture with special reference to the processing of horticultural products in the national and international area. He called upon the horticultural scientists to bestow greater attention on the mass production of Orchids and Cutflowers and their processing techniques. "This is going to be the future", he added.

Dr. Rajagopalan lauded the university for its strong linkage with industries, adding 28 industrial collaboration research programmes to the mandate. "This happy trend should be continued and this close collaboration of TNAU with industries go a long way in enhancing the export-oriented manufacturing", he aptly said.

Referring to the importance of Watershed Management to solve the regional problems by properly understanding the resource constraints of water and land, he called for designing solutions for this interdated and complex problem. Dr. Rajagopalan wanted the TNAU Water Technology Centre with its multidisciplinary manpower to generate adequate data base on ways and means of effectively handling the problems of Watershed Management in Tamil Nadu. "Any small contribution in this aspect would have high pay-off", he observed and underlined the importance of it in the present day changing agricultural scenario.

Dr. Rajagopalan called for greater emphasis on the basic aspects of biotechnological research, in order to effectively make use of the basic knowledge generated for the applied biotechnological programmes. He also wanted the farm graduates to be equipped well so as to suitably meet the ever growing agricultural export potentialities in India.

Dr. S. Jayaraj, Vice-Chancellor, in his concluding remarks disclosed that a new cell would be formed to monitor the commercial agriculture and Industrial Collaboration Programmes in Tamil Nadu Agricultural University.

National Seminar on Papaya Production at TNAU

"The Tamil Nadu Agricultural University (TNAU) has become a lead centre for papaya crop in the entire country and so far had released six papaya varieties because of the fruitful research undertaken by it over the last two decades", said Dr. K.L.Chadah, Deputy Director-General, Horticulture, ICAR, New Delhi, while delivering the key-note address at the inaugural function of the National Seminar on Papaya Production and utilization, jointly organised by TNAU, Horticultural Society of India and South Indian Horticultural Association.

Dr. Chadah also complimented TNAU for supplying quality papaya seeds to the farmers and others, thus playing a greater role in popularising the papaya crop and its byproducts. He traced the history of development of research centres for various fruits and vegetable crops all over the country and also pointed out the priority given to the horticultural crops in Eighth Five Year Plan. Dr. Chadah spoke at length about the climatic conditions, factors of production, pollination and fruit set, flower types and genetic resources of papaya crop. He also emphasised the need for controlling the pest and diseases, and evolving suitable post-harvest technologies for promoting the papaya crop.

Dr.S. Jayaraj, Vice-Chancellor of TNAU in his address underlined the need for nutritional security through horticultural crops and said that the papaya was rich in vitamins and minerals and offered great scope for developing many by-products in a commercial way. He said that there was a need to develop cold tolerant and saline tolerant papaya varieties in different parts of the country. Besides, biotechnological approaches should be attempted on a large scale in utilisation of waste materials in processing industries, he added.

News from UGC

Countrywide Classroom Programme

Between 16th March to 23rd March 1992 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 1.00 p.m. to 2.00 p.m. and 4.00 p.m. to 5.00 p.m. The programme is available on the TV Network throughout the country.

Ist Transmission

1.00 p.m. to 2.00 p.m.

16.4.92

"Electronics-V: Amplifier"

"Spectrometary in Geological Remote Sensing"

"The Making of a Poem"

17.4.92

No Telecast

18.4.92

"Nicholas Garland and His Modern Cartoons"

"Teyyam-A Ritual dance of Kerala"

"The Week Ahead"

19.4.92

No Telecast

20.4.92

"What Causes Magnetism"

"India's Industrial Policy"

"Training Course for the Ophthalmologist"

21.4.92

"Environment Friendly Detergent"

"Women's Studies-III: Violence Against Women"

"Know More About Your Skin"

22.4.92

"Chrometography Techniques"

"Lubeck : Portrait of a city"

"Pond of Plenty"

23.4.92

"Gunther Haese

"Spectral Properties in Geological Remote Sensing

"Masterpieces in World Literature : Fyodore Nikhailovich Dostayevesky"

IInd Transmission

4.00 p.m. to 5.00 p.m.

16.4.92

"Freshers in the World of Machinery"

"Phosphate Rock"

"Indian Poetics-IV: Functions of Indian Aesthetics"

17.4.92

No Telecast

18.4.92

"Camping with Science-II"

"Berlin: Blockade and Airlift"

"The Week Ahead"

19.4.92

No Telecast

20.4.92

"Radiation Hazards: The Natural Background"

"Management-XI: Planning"

Saga of Silk-II: Silk warm Rearing and Mulberry"

21.4.92

"Nomenclaure of Organic Compounds-I: Introduction"

"Introduction to Programmed learning"

"The Dinosaur-III: Evolution of Dinosaur"

22.4.92

"N.D.T.-V : Ultrasonic"

"Archive: A Source for the Past"

"The Clock that time Us"

23.4.92

"Computers in Office Automation"

"The Excavator"

"A Game of Chess"

South and North India are Poles Apart!

C. Parvathamma*

K. Seshadri. Social Ethos of South India. Jaipur, Arihant Publishers, 1991. pp. vii + 111. Rs. 145.00.

Kandadai Seshadri with a rich experience after serving in a State university and two Central universities has brought out the present publication. From the titles of his other publications, I guess that he is a political scientist.

The book is about South India and the author's intention is to clear the prejudices and to promote proper understanding as well as to identify the cause of tensions and eliminate them amongst different people admittedly the North and South. His concern is that more often, it is the educated individual rather than the common man who is guilty of this shortcoming. The author's experience at JNU (Jawaharlal Nehru University) and life in Delhi must have provided the basis for attempting to write this book. But where is the guarantee that the so called educated will read the book so that the jaundiced outlook will be rectified.

In order to bring home and present true picture of South India, the author has undertaken to elaborate the topography of South India which covers four different linguistic States of Andhra, Tamilnadu, Karnataka and Kerala, all together constitute the Dravidian speech family. The book has in all six chapters spread over 111 pages and discusses the role of religion, rituals and temples, political movements, contribution to independence movement by South, Scheduled Castes and other minorities and so forth.

The book as intended by the author is just good for general reading. After depicting a general picture of the region where language, caste system, land holding pattern touching different periods in history and rulers, including the post-independence political leaders and different regional political parties they floated and many more details about artists, musicians are given in brief.

The role of religion, rituals and temples sketches the richness of art, architecture, the role of the three great acharyas — namely, Shankaracharya, Madwacharya and Ramanujacharya. Mention is made of the attempts to reform the rigid caste structure and emergence of the Bhakti cult under basava and his associates in Karnataka and elsewhere in South India. In all the author has tried to impress the rich cultural heritage of South presumably in contrast to North India.

Early years of independence movement and other political movements pertaining to South India, an attempt has been made to show how southerners were far ahead in opposing British imperialist attempts at annexation and were anti-British long before the 1857 Sypoy mutiny. The emergence of Backward Classes Movement in Madras Presidency, Pro-British and Anti-Brahmin, the self-respect and Dravidian movement, opposition to Brahmanical Hinduism and similar details are given. In addition various peasant movements, religious reform movements in different parts of South India are elaborated. Pre-independence to latest Naxalite and people's war group political activist movements are discussed.

The chapter on Scheduled Castes and other minorities gives in a nutshell the atrocities perpetuated by caste Hindus on ex-untouchables in Southern States more so in post-independence India. The coming of Christianity and its spread in different parts of South India and how pre-conversion caste equations still persist after embracing christianity are discussed. The muslims of South speak more often the regional language than Urdu in contrast to North. The Muslim rulers of Mysore, Hyder and Tippu engaged in conquest and annexation of territory were largely responsible for the conversion of people to Islam and its spread. The Bahamani Kingdoms and the Nizam of Hyderabad perhaps consolidated the position. Yet Hindu-Muslim conflict and communal riots are far less in contrast to North India where even Muslim sub-groups like the Shias and Sunnies do not see eye to eye and often openly indulge in fighting.

Women's Status and role is also mentioned briefly. Their movement is less restricted. Female literacy is high, perhaps Kerala ranks highest in the country. On the whole women

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in South though conservative with regard to customs and traditions are fairly better placed and treated as such in society.

The book though its title is "Social Ethos of South India", to me it seems it does not pay equal attention to all the four States. While Andhra and Tamilnadu receive somewhat elaborate treatment, Kerala and Karnataka get a passing reference. To be accurate every region in India has its local history, myths, legends to fortify its claims in terms of philosophers, scholars, religious centress, political leaders, and others who pioneered Indian independence movement.

Gujarat provided a Gandhi who became a Mahatma, Maharashtra has its share in Tilak, Phule, Ambedkar. Bengal had its poet laureate Rabindranath Tagore, its religious leaders in Ramakrishna Paramahansa, Vivekananda, Aurobindo, Sharadamani and a host of others. Merely to highlight the 3 acharyas and their tradition as something special to South is shortsighted. There is a Shankaracharya Mutt in Puri in Orissa. While most sacred river ganges and important places of pilgrimage to Hindus irrespective of North-South even today continue to be Kashi, Prayag and Gaya. While Rameswaram in deep South, Tirupathi in Andhra Pradesh attract pilgrims from North India by lakhs.

Given the above factors which divide people, promote prejudice, tensions are the modern phenomena, a direct result of the political processes, uneven division of the country into linguistic States, a large number falling under so-called 'Hindi belt' and most of our Prime Ministers hailing from one State in North. The Brahmin exodus from South in search of jobs in Delhi, Culcutta and elsewhere. The economic competition for few positions which are available is probably the most significant cause for rationalizing south-north differences. The emphasis naturally is made by the educated and vocal sections rather than common people because it is the educated section which feels the pinch of competition.

The author could have done a much better job by publishing articles in popular magazines to attract more readership. As it is in book form, how many can lay their hands on it. To what extent the detractors will be influenced to change their attitude towards South Indians remains a speculation irrespective of the author's intention. The content of the book is very readable but it is jumbled up. There should have been comparative narration of facts from north to make it more impressive. After all North and South are part of one great Indian Tradition.

COMMUNICATION

Evaluation of University Teachers

With reference to the letters published in the column "Communication" in the *University News*, 3 Feb 1992 on 'Evaluation of University Teachers', I wish to say asunder :

There is of course a direct correlation among teacher, his knowledge and performance. A Teacher is definitely required to be knowledgeable. But it is to be noted that all intellectuals cannot be good teachers. One has to give equal weightage to the power of expression which is important for a teacher from students point of view. Besides, the performance of a teacher should be judged by his aptitude towards progressive and useful academic activities. The remedy suggested by Prof.S.Kumar appears to be a crude way of assessment because we do not expect from a teacher just to reproduce or rewrite what he knows about the subject. Even when we talk about examination system for evaluation of students we all agree that answering the questions in stipulated time & scoring good grade does not prove a student having perfect knowledge of the subject matter. In my opinion officials of college/university may keep a close look over the research, development and other academic activities of a teacher to assess him.

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RESEARCH IN PROGRESS

A list of Research Scholars registered for Doctoral Degrees in Indian Universities

Physical Sciences

Physics

1. Bera Kakoli. **Correlation function in condensed systems.** Delhi. Dr S P Tewari, Department of Physics, University of Delhi, Delhi.

2. Chopra, Sudha. **Preparation and characterisation of transition metal oxide classes.** Delhi. Prof D P Goyal, Department of Physics, University of Delhi, Delhi.

3. Ghosh, Suchita. **Nightside ionosphere of Venus.** Delhi. Dr Narendra Nath, Department of Physics, University of Delhi, Delhi and Dr K K Mahajan, Deputy Director, National Physical Laboratory, New Delhi.

4. Jain, Rituka. **Thin film fabrication using sol- gel techniques.** Delhi. Dr G K Chadha, Department of Physics, University of Delhi, Delhi.

5. Kapoor, Vijaya. **Electrical and optical properties of transparent oxide films.** Delhi. Dr Raj Rup, Department of Physics, University of Delhi, Delhi.

6. Karn, Santosh Kumar. **Some aspects of relativistic heavy ion collisions and quark-gluon plasma.** Delhi. Dr R S Kaushal, Department of Physics, University of Delhi, Delhi and Dr Y K Mathur, Department of Physics, University of Delhi, Delhi.

7. Parashar, Neeti. **A study of neutral and charged pion production in 800 GEV proton-nucleus interaction.** Delhi. Dr R K Shivpuri, Department of Physics and Astrophysics, University of Delhi, Delhi.

8. Patnaik, Bipin Kumar. **Theoretical analysis of M H D flow characteristics of some visco-elastic conducting fluids.** Utkal. Dr Sadasiva Biswal, Reader, Department of Physics, Nayagarh College, Nayagarh, Puri.

9. Uma Maheshwar Rao, S. **Preparation and characterization of semiconducting materials.** Delhi. Dr G K Chadha, Department of Physics, University of Delhi, Delhi and Dr S K Sharma, National Physical Laboratory, Hill Side Road, Delhi.

Chemistry

1. Arora, Veena. **Synthesis and spectral studies on some transition metal complexes of poly thiazoles.** Delhi. Dr Pavan Mathur, Department of Chemistry, University of Delhi, Delhi.

2. Gaikwad, Satish Baburao. **Studies of thiosemicarbazone transition metal complexes.** Shivaji. Dr (Smt) V A Jadhav, Department of Chemistry, Shivaji University, Kolhapur.

3. Sharma, Tarun Kant. **Synthesis of amphiphilic Fe (III) and Mn (III) porphyrins and their model monoxygenase reaction.** Delhi. Dr S M S Chauhan, Department of Chemistry, University of Delhi, Delhi.

4. Suma. **Metal complexes of phenyl butazone oxyphen butazone and monophenyl butazone.** Kerala. Dr C P Prabhakaran, Prof, University Department of Chemistry, University of Kerala, Thiruvananthapuram.

5. Vijayan Pillai, R. **Catalytic effect of ruthenium (IV) and iodide on redox reactions.** Kerala. Dr T S Anirudhan, Lecturer, Department of Chemistry, University of Kerala, Thiruvananthapuram.

Engineering & Technology

1. Anju. **An expert system for performance and design of transformer.** Banasthali. Dr B Ravindranath.

2. Saxena, Madhavi. **A knowledge representation on scheme for intelligent Hindi teaching.** Banasthali. Dr Rekha Govil.

3. Shastri, Jyoti. **Development of programming language in Hindi specially for school children.** Banasthali. Dr Rekha Govil.

BIOLOGICAL SCIENCES

Anthropology

1. Bhardwaj, Shaila. **Effect of yoga on ageing.** Delhi. Dr Satwanti Kapoor, Department of Anthropology, University of Delhi, Delhi.

Biology

1. Anil Kumar, N C. **A study on the application potential of data from Indian remote sensing satellites for pollution monitoring efforts with special reference to retting of coconut husk in Anchythengu-Kadinamkulam estuarine system in Kerala.** Kerala. Dr P K Abdul Aziz, Reader, Department of Aquatic Biology and Fisheries, University of Kerala, Thiruvananthapuram.

2. Anilkumar, T. **Studies on the nutritive status of certain selected marine organisms along the Kerala coast, India.** Kerala. Dr Tresa V Fernandez, Lecturer, Department of Aquatic Biology and Fisheries, University of Kerala, Thiruvananthapuram.

3. Beenakumary, S. **Studies on mass rearing of larvivorous fishes.** Kerala. Dr P Natarajan, Reader, Department of Aquatic Biology and Fisheries, University of Kerala, Thiruvananthapuram.

4. Biju Kumar, A. **Parasites and diseases of flat fishes (Order Pleurectiformes) of South-West Coast of India.** Kerala. Dr S Radhakrishnan, Lecturer, Department of Aquatic Biology and Fisheries, University of Kerala, Thiruvananthapuram.

5. Bindu, L. **Studies on the role of protein quality and quantity of the growth and reproduction of selected fishes.** Kerala. Dr V Jayaprakas, Reader, Department of Aquatic Biology and Fisheries, University of Kerala, Thiruvanthapuram.

6. Chitra, G. **Chemical biology of algae along the Coast of Kerala with special reference to industrial application.** Kerala. Dr V Sobha, Lecturer, Department of Aquatic Biology and Fisheries, University of Kerala, Thiruvananthapuram.

7. Geetha, S Pushpa. **Studies on induced polyploidy in selected fishes.** Kerala. Dr V Jayaprakas, Reader, Department of Aquatic Biology and Fisheries, University of Kerala, Thiruvananthapuram.

8. Hari Shankar, A J. **Impact of acidification on aquatic biological systems.** Kerala. Dr S Radhakrishnan, Lecturer, Department of Aquatic Biology and Fisheries, University of Kerala, Thiruvananthapuram.

9. Hariram, P S. **Impact of oil spillage on the aquatic fauna of the Ashtamudi Lake.** Kerala. Dr C M Aravindan, Reader, Department of Aquatic Biology and Fisheries, University of Kerala, Thiruvananthapuram.

10. Jacob, Rani Mary. **Studies on cladocerans of the South-West**

Coast of India. Kerala. Dr C M Aravindan, Reader, Department of Aquatic Biology and Fisheries, University of Kerala, Thiruvananthapuram.

11. Jacobkutty, M I. **Investigations on the influence of water quality parameters on the spreading of water weeds in inland water bodies of Kerala.** Kerala. Dr V Sobha, Lecturer, Department of Aquatic Biology and Fishereis, University of Kerala, Thiruvananthapuram.

12. Jaya, V. **Comparative studies on the feeding adaptations in pleuronectiformes.** Kerala. Dr S D Rita Kumari, Lecturer, Deartment of Aquatic Biology and Fisheries, University of Kerala, Thiruvananthapuram.

13. John, Sunny. **Studies on certain selected mangal communities along the Kerala Coast, India.** Kerala. Dr Tresa, V Fernandez, Lecturer, Department of Aquatic Biology and Fisheries, University of Kerala, Thiruvananthapuram.

14. Krishna Kumar, K. **Some studies on the ecotoxicology of an aquatic ecosystem.** Kerala. Dr Tresa V Fernandez, Lecturer, Department of Aquatic Biology and Fisheries, University of Kerala, Thiruvananthapuram.

15. Lali, G. **Distribution of faunal associates and its relationship with seaweed complexity.** Kerala. Dr K Padma Kumar, Lecturer, Department of Aquatic Biology and Fisheries, University of Kerala, Thiruvananthapuram.

16. Rajasree, Puthiya Veettil. **Microbial association with wood boring organisms of Thiruvananthapuram Coast.** Kerala. Dr K Dhevendran, Reader, Department of Aquatic Biology and Fisheries, University of Kerala, Thiruvananthapuram.

17. Rameshkumar, B. **Influence of artificial feeds on the growth and reproduction of the fresh water prawns,**Macrobrachium rosenbengii. Kerala. Dr P Natarajan, Reader, Department of Aquatic Biology and Fisheries, University of Kerala, Thiruvananthapuram.

Biochemistry

1. Danial, Reji Susan. **A comparative study on the hypolipidemic and related effects of 3 flavanoids.** Kerala. Dr K T Augusti, Prof, Department of Bio-Chemistry, University of Kerala, Kariavattom and Dr K Saraswathy Devi, Reader, Department of Bio-Chemistry, University of Kerala, Kariavattom.

2. Helen, A. **Biochemical investigations on dietary oils.** Kerala. Dr P L Vijayammal, Reader, Department of Bio-Chemistry, University of Kerala, Kariavattom.

Botany

1. Agarwal, Ravi Prakash. **Ecological studies of some forest nurseries.** H S Gour. Dr S P Bajpai.

2. Asha, V V. **Ethnobotany and ethnopharmacology of hepatoprotective medicinal plants used by tribals of South India.** Kerala. Dr P Pushpangandan, Director, Tropical Botanic Garden and Research Institute, Palode.

3. Choudhary, Prafulla. **Studies on germination behaviour of certain forest trees seeds with special reference to allelopathic impact of** Lantana indica **and associated seeds.** H S Gour. Dr S P Bajpai.

4. Chourasia, Pramod. **Studies on the management of betel vine diseases in Sagar Division.** H S Gour. Dr K M Vyas and Dr A S Mishra.

5. Dixit, Ashwini Kumar. **Ecology of microbiology of selected native trees of Central India.** H S Gour. Prof B P Mishra.

6. Duhane, Dinesh. **Studies on the propagation of pan,** Piper betle L **by tissue culture techniques.** H S Gour. Prof K M Vyas.

7. Geetha, M. **Tissue culture studies in** Adhatoda vasica**: Exploration of vasicine alkaloid through various** in vitro **techniques.** Kerala. Dr G Mohanadasan Nair, Reader, Department of Botany, University of Kerala, Kariavattom.

8. Jayakumar, G R. **Pharmacognostical and phytochemical investigatons of some rare, lesser known, hitherto unknown wild medicinal plants of Kerala.** Kerala. Dr P Pushpangandan, Director, Tropical Botanic Garden and Research Institute, Palode.

9. John, Shaji. **Induction of Fusarium wilt resistance in tomato by** in vitro **techniques.** Kerala. Dr G Mohanadasan Nair, Reader, Department of Botany, University of Kerala, Kariavattom.

10. Malaiya, Manju. **Studies of anti-bacterial activity of some Indian traditional remedies.** H S Gour. Dr K M Vyas.

11. Muraleedharan, P P. **Studies on induced polyploidy in ornamental and economically important plants.** Kerala. Dr B Vijayavalli, Reader, Department of Botany, University of Kerala, Kariavattom.

12. Rajendraprasad, M. **Light harvesting potential and related aspects of trees commonly found in sacred groves of Kerala.** Kerala. Dr P Pushpangandan, Director, Tropical Botanic Garden and Research Institute, Palode.

13. Tiwari, Pradeep Kumar. **Studies on seed biology and regeneration of certain forest trees species of Central India.** H S Gour. Dr S P Bajpai.

Medical Sciences

1. Dubey, Pavan Kumar. **Investigation on potential of cell immobilization technique for biotransformation/biosynthesis of therapeutically important phytopharmaceuticals.** H S Gour. Prof Vinod Kumar Dixit.

2. Gupta, Ashish Kumar. **Mechanism of activation of inflammatory cells isolated from mice with experimental ascending pyelonephritis induced by** E. coli **and to study the role of various antigens of** E. coli **in the activation of these cells.** PGI.

3. Jain, Sanjay. **Biotechnological approach for the production of bio-active compounds from callus and cell cultures of some medicinal plants.** H S Gour. Dr M D Kharya.

4. Ranjeet Singh. **Liposomal topical drug delivery systems for controlled localized and systemic delivery: Preparation, characterization and evaluation.** H S Gour. Dr S P Vyas.

5. Soni, Swarnalata. **Penetration enhancement of transdermal delivery of some drugs.** H S Gour. Prof V K Dixit.

THESES OF THE MONTH

A list of Doctoral Theses accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Devanna Kamath, G. **Some topics in graph theory: Some generalizations of coloring numbers.** Karnatak. Dr E Sampathkumarachar, Prof, Department of Mathematics, University of Mysore, Mysore.

2. Govil, Lalit Kumar. **Approximation of lower degree splines.**

Durgawati. Dr Arun Kumar, Department of Mathematics, Rani Durgawati Vishwavidyalaya, Jabalpur.

3. Kumaravel, A. **Studies on problem of constructing maze recognising automata.** Anna. Dr Ponnammal Natarajan, Asstt Prof, Department of Mathematics, College of Engineering, Madras.

4. Padmavathamma, M. **A study of arithmetic functions relative to certain convolutions in number theory.** Venkateswara. Prof V V Subrahmanya Sastri, Department of Mathematics, Sri Venkateswara University, Tirupati.

5. Seth, Arindam. **On semigroup T(A,B) and related problems.** Calcutta.

6. Veena, B H. **The study of dispersion and lubrication in couple stress fluids.** Bangalore. Dr M Venkatachalappa, Reader, Department of Mathematics, Central College Campus, Bangalore.

7. Venkata Subramanyam, M. **Waves in piezoelectric materials of hexagonal system.** Anna. Dr C Anandam, Reader, Department of Mathematics, Alagappa College of Technology, Madras.

Statistics

1. Dattatre, Nutan E. **Some investigations in optimal designs.** Devi Ahilya. Dr Bhagwandas, Prof, Department of Statistics, Devi Ahilya Vishwavidyalaya, Indore.

2. Subbarayudu, M. **Police production functions: An econometric study.** Venkateswara. Dr P Balasiddamuni, Lecturer, Department of Statistics, Sri Venkateswara University, Tirupati.

Physics

1. Ahluwalia, Gurinder Kaur. **Thermal analysis and electrical transport studies of amorphous $Se_{80-x}Sb_xTe_{20}$ system.** Delhi.

2. Aruna, P. **Studies on physico-chemical properties in relation to internal pressure and free volume in aqueous solutions.** Anna. Dr S Natarajan, Prof and Head, Department of Physics, College of Engineering, Madras.

3. Bhasin, Anju. **Oxygen interaction at 15-200 GEV per nucleon energy in emulsions.** Jammu. Dr L K Magotra and Dr G L Koul.

4. Das, Radhendu. **Laser Raman spectroscopic and dielectric studies of some molecules of biological significance.** NEHU. Dr K Kumar, Department of Physics, North Eastern Hill University, Shillong.

5. Ghosh, Manuja. **Crystal structure studies on molecules of biological interest.** Calcutta.

6. Jairaj, M E. **Study of some metastable alloy phases produced by rapid solidification.** Devi Ahilya. Dr Ajay Gupta, Prof, Department of Physics, Devi Ahilya Vishwavidyalaya, Indore.

7. Jha, Sudip Ranjan. **Thermoelectric power studies on high Tc superconductors.** Delhi.

8. Kalainathan, S. **Investigations on the grain growth mechanism in P, As and B doped polysilicon, intrinsic polysilicon, aluminium, lead, cadmium and Al_2O_3:ZrO_2.** Anna. Dr R Dhanasekaran, Reader, Crystal Growth Centre, Alagappa College of Technology, Madras.

9. Kaushik, Kalpana. **Design and development of micro processor based data acquisition and control system.** H S Gour. Dr H V Verma, Department of Physics, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

10. Khan, Mahamad Nazoor. **Small angle X-ray scattering studyof sisal fibre using correlation functions.** Sambalpur. Dr T Mishra, Prof, Department of Physics, Regional Engineering College, Rourkela.

11. Kulwant Singh. **Study of summing phenomenon in some radioactive nuclei.** GNDU.

12. Manoharan, K. **Infrared and laser Raman spectral studies on some polyatomic molecules and their vibrational analysis.** Anna. Dr S Natarajan, Prof and Head, Department of Physics, College of Engineering, Madras.

13. Mathi Jaya, S. **Electric structure and properties of some oxide and chalcogenide systems.** Anna. Dr R Asokamani, Prof, Department of Physics, College of Engineering, Madras.

14. Mishra, Arun Kumar. **Studies of the electroluminescence of CaS: Cu, Eu, and CaS: Cu,Er phosphors.** Ghasidas. Dr B P Chandra, Rani Durgawati Vishwavidyalaya, Jabalpur.

15. Mittal, Harish Mohan. **Study of nuclear structure of medium mass nuclei.** Delhi.

16. Patel, Hasmukhbhai Kalidas. **Theoretical study of certain metallic properties by local pseudopotentials.** Patel. Prof A R Jani.

17. Saxena, Kanchan. **Studies on the properties and dynamics of molecular reorientation processes in ferroelectric liquid crystals.** Delhi.

18. Suryanarayana Murti, T. **Study of IR, optical and EPR spectra of defects in single crystals.** Osmania.

Chemistry

1. Bhattacharyya, Ujjwal. **Purification and characterization of phospholipid transfer protein from goat liver.** Calcutta.

2. Durga Prasad, Chaparala. **Studies on the properties of normal and reversed micellar systems.** AMU. Dr H N Singh.

3. Elampoornam, T. **Studies on the chemistry of ground waters in the deltaic area of Thanjavur District over the period 1980-1988.** Bharathidasan. Dr G Arunachalam, Prof, Department of Soil Science and Agricultural Chemistry, Tamilnadu Agricultural University, Coimbatore.

4. Gotmare, Sulekha R. **Studies in metal complexes.** SNDT. Dr M S Mayadeo.

5. Gupta, Rameshwar Prasad. **Studies in the oxidation of some biologically important carboxylic acids by mono and di de-eletronator metal ions.** Jiwaji. Dr R P Bhatnagar, 26 Jawahar Nagar, Lashkar, Gwalior.

6. Jain, Amitabh Kumar. **Kinetics and mechanism of complexation reactions of (i) Ni(II), Co(II), Cu(II)-L-alpha-amino-beta-methyl butyric acid(ii) Ni(II)-L-alpha-amino pentanedioic acid-L-alpha- amino-beta(p-hydroxy phenyl) propionic acid L-alpha-amino-beta- hydroxy propionic acid (iii) Ni(II), Co(II), Cu(II)-1-methyl glycocyamidine(iv) Ni(II), Co(II), Cu(II)-L-alpha-amino-gamma- ureido-n-valeric acid (v) Ni(II), Co(II), Cu(II)-L-alpha amino- beta-(p-hydroxy) phenyl propionic acid.** Delhi.

7. Khan, Shoeb Iqbal. **Studies on pyrazolo (C, 4-d) pyrimidine nucleosides.** AMU. Prof Shafiullah.

8. Madhusudan Rao, D. **Investigations on phase transfer catalysis: Synthesis of some new 2 - cycloalkyl chromones and related compounds as potential antifeedants.** Osmania.

9. Mishra, Sarbeshwar. **Preparation and characterisation of some metal complexes-chromium (III) and oxovanadium (IV).** Sambalpur. Dr K M Purohit, Asstt Prof, Department of Chemistry, Regional Engineering College, Rourkela.

10. Mittal, Raman Rani. **Synthetic studies in some insect growth regulators.** HP.

11. Muralikrishna, C. **Enzyme catalysed synthesis of biologically active compounds.** Osmania.

12 Nakrani, Ashokkumar Durlabhjibhai. **Studies on metal chelates.** Bhavnagar. Dr K J Shah, Reader, Department of Chemistry,

Bhavnagar University, Bhavnagar.

13. Naqvi, S Masood Zaheer. **Studies on organophosphorus pesticide, dimecron inducting changes in the brain metabolism.** AMU. Prof Mahdi Hasan.

14. Pancholi, Hemendrakumar Bhupendrabhai. **Resins and their polychelates.** Patel. Dr Mohanbhai M Patel.

15. Pandey, Inder Kumar. **Studies on the mesoionic oxazole-imine system and 1, 3-dipolar cycloadditions of nitrones in aqueous media.** IIT, Delhi. Dr P S Pandey, Department of Chemistry, Indian Institute of Technology, Delhi.

16. Parminder Kour. **Sorption studies of some acids and polypeptides on chemically pre treated sorbents with relation to chromatography.** Ravishankar. Dr G L Mundhara, Reader, School of Studies in Chemistry, Ravishankar University, Raipur.

17. Rai, Sandeep. **Studies on polymer metal complexes.** Durgawati. Dr U D N Bajpai, Department of Chemistry, Rani Durgawati Vishwavidyalaya, Jabalpur and Dr C V P Pillai, Head, Department of Chemistry, Government Engineering College, Bilaspur.

18. Rajaganapati, Pragada. **Studies on substitution reactions of some mixed ligand complexes of chromium (III) by orthophosphoric acid.** Andhra.

19. Rajendra Prasad, K. **Synthesis and physiological activity of 3-heteryl and 3,4-annelated aza heterocycles derived from 3-amino coumarins.** Osmania.

20. Rama Krishna, Hari. **Catalytic functionalities of supported sulfides.** Osmania.

21. Rama Mohana Rao, Adari. **Some studies on the redox reactions of thallium with substances of biological importance.** Andhra.

22. Shah, Mayank Jayendrabhai. **Synthesis and structure elucidation of metal organic and organo metallic compounds by spectral analysis.** Bhavnagar. Dr S N Misra, Prof and Head, Department of Chemistry, Bhavnagar University, Bhavnagar.

23. Shah, Shailesh Navinchandra. **Synthesis and evaluation of the liquid crystalline materials.** Baroda.

24. Sharma, R P. **Thermodynamic, dynamic and structural characteristics of some binary eutectics.** GNDU.

25. Shrivastava, Geeta. **Some investigation in chemical and electrical properties of flowers, green leaves and fruits.** Ghasidas. Dr A N Gavai, Govt Engineering College, Bilaspur and Dr G P Chhalotra, Govt Engineering College, Bilaspur.

26. Singh, Mahendra Pal. **The chemistry of natural products.** AMU. Dr Nizam U Khan.

27. Sivanesan, S. **Experimental studies on inorganic ice nucleants for weather modificatin.** Anna. Dr R Gobinathan, Reader, Department of Chemical Engineering, Alagappa College of Technology, Madras.

28. Sivaramakrishnan, R. **Kinetics of consecutive reactions.** Madras.

29. Thirupathi Rao, Tippanu. **New spectrophotometric methods for the assay of some anticoagulants, antiarrhythmic and oral hypoglycaemic agents in pharmaceutical formulations.** Andhra.

30. Tomar, Govindsingh. **Studies on the chemical composition of common feeds and fodders of Malwa region of Madhya Pradesh.** Devi Ahilya. Dr P T Malse, Ram Bagh, Indore and Dr D D Dubey, Agriculture College, Indore.

31. Tripathi, Pratima. **Co-ordination behaviour of amino and Schiff base derivatives of azoles containing two or more hetero atoms.** Banasthali

32. Usha Rani, T. **Redox indicators for vanadametry and bromatometry.** Mysore. Dr R Shakunthala, Prof, Department of Chemistry, University of Mysore, Mysore.

Earth Sciences

1. Akram Ali. **Hydrogeology and hydrochemistry of Gandak sub- basin in Padrauna Tehsil, Distt Deoria, U P.** AMU. Dr Sami Ahmad.

2. Bhatia, Rajiv. **Petrography, geochemistry and petrogenesis of evaporites of Jammu Region and Kashmir Valley.** Jammu. Dr T R Sharma and Dr B P Singh.

3. Changkakoti, Upendra Nath. **Studies on the sylhet sandstone of West Daranggiri Coal Field, Meghalaya, with special reference to sedimentology and coal.** Gauhati. Dr D N D Goswami, Prof, Department of Geological Science, Gauhati University, Guwahati.

4. Changkakoti, Upendra Nath. **Studies on the sylhet sandstone of West Daranggiri Coal Field, Meghalaya, with special reference to sedimentology and coal.** Gauhati. Dr D N D Goswami, Prof, Department of Geological Science, Guahati University, Guwahati.

5. Deota, Bhushan Sharad. **Geological studies on the South Gujarat quaternary land scape with special reference to environmental planning and management.** Baroda.

6. Dutta, Utpal. **Analysis of aeromagnetic anomaly over Narmada- Son lineament.** ISM. Prof R K Verma and Prof M Mukhopadhyay, Indian School of Mines, Dhanbad.

7. Fakhri, Mohd Jafar Md Zadeh. **An orientation geochemical survey near Malanjkhand copper deposit, M P.** Osmania.

8. Khan, Mohammad Shamim. **Geochemical studies on the basal Aravalli-lower proterozoic, volcanic rocks around Udaipur, Rajasthan.** AMU. Dr M Raza.

9. Ramamoorthy, K. **Lower Maestrichtian (Upper Cretaceous) Brachiopoda from Tiruchirapalli District, South India.** Bharathidasan. Dr N Dakshinamoorthy, Asstt Prof, Department of Metallurgical Engineering, Regional Engineering College, Tiruchy.

10. Sathyamoorthy, Subramania. **Integrated groundwater studies in and around Tiruchirapalli, Tamil Nadu.** Bharathidasan. Dr N Dhakshinammcrthy, Asstt Prof, Department of Metallurgical Engineering, Regional Engineering College, Tiruchi.

11. Surender Singh. **Early pliocene Radiolaria: Biostratigraphy and events in the Car-Nicobar sequences, Northeast Indian Ocean.** Delhi.

12. Venkateswara Rao, Sunkara. **Hydrogeological studies of the area between Palakonda and Viraghattam, Srikakulam District, Andhra Pradesh.** Andhra.

Engineering & Technology

1. Bhommick, Ashis. **Synthesis, characterization and biomedical applications of polyurethaneurea.** IIT Delhi. Dr Alok R Ray, Centre for Biomedical Engineering, Indian Institute of Technology, Delhi.

2. Biswal, Karttik Chandra. **Studies on certain aspects of gas-solid fluidization in conical vessels.** Sambalpur. Dr G K Roy, Prof, Department of Chemical Engineering, Regional Engineering College, Rourkela.

3. Channappa, T C. **Hydrologic and farming system studies for watershed modelling.** Bangalore. Dr K Ranga, Registrar (Evaluation), Bangalore University, Bangalore.

4. Das, Nanda Dulal. **Some studies on hyperbaric welding.** IIT Delhi. Prof R S Parmar, Department of Mechanical Engineering, Indian Institute of Technology, Delhi.

5. Gaur, Siddhartha. **Studies on biomass gasification.** IIT Delhi. Prof P D Grover, Department of Chemical Engineering,

Indian Institute of Technology, Delhi and Prof T Rajeswara Rao, Department of Chemical Engineering, Indian Institute of Technology, Delhi.

6. Gupta, Vijay Kumar. **Computer integrated manufacturing of precision engineering components.** IIT Delhi. Dr R Sagar, Department of Mechanical Engineering, Indian Institute of Technology, Delhi.

7. Hari Kumar, K C. **Computed phase equilibria in iron base ternary alloys.** IIT Delhi. Prof V Raghavan, Department of Applied Mechanics, Indian Institute of Technology, Delhi.

8. Jeyakumar, A Ebenezer. **Development of verisimilar juxtaposition model and study of physical phenomena on polluted insulators.** Anna. Dr K Dharmalingam, Prof and Director, Division of High Voltage Engineering, College of Engineering, Madras.

9. Kapur, Rai Bahadur. **Investigations in transverse cold rolling.** IIT Delhi. Prof B L Juneja, Department of Mechanical Engineering, Indian Institute of Technology, Delhi.

10. Khanna, Ravinder. **Studies on transmission and resonant structures in suspended strip line configuration.** IIT Delhi. Prof Bharathi Bhat, Centre for Applied Research in Electronics, Indian Institute of Technology, Delhi and Dr S K Koul, Centre for Applied Research in Electronics, Indian Institute of Technology, Delhi.

11. Mahna, Vinod Kumar. **Kineto-elasto dynamic analysis of spatial mechanisms.** IIT Delhi. Prof N T Asnani, Department of Mechanical Engineering, Indian Institute of Technology, Delhi.

12. Misra, Ajai. **Geomorphic studies of middle Yamuna Valley.** IIT Delhi. Prof P Kumar, Department of Civil Engineering, Indian Institute of Technology, Delhi.

13. Patil, Krushna Nivrutti. **Studies on the gasification characteristics of selected agricultural wastes using updraft reactor.** PAU.

14. Peer Mohamed, A. **An evaluation of double rove spinning process in short staple spinning system.** Anna. Dr V Subramanian, Head, Department of Textile Technology, Alagappa College of Technology, Madras.

15. Raghu Kumar, S. **Investigations of double dielectric fin lines and E-plane filters for millimeter-wave applications.** IIT Delhi. Prof Bharathi Bhat, Centre for Applied Research in Electronics, Indian Institute of Technology, New Delhi.

16 Sharma, Rakesh Chandra. **Studies on the reactivity of some Indian fly ashes and cements blended with them as influenced by their chemical and physical characteristics.** IIT Delhi. Prof S Krishnamoorthy, Centre for Materials Science and Technology, Indian Institute of Technology, Delhi.

17. Sundararajan, R. **Analytical and experimental investigation of the behaviour of prefabricated ribbed wall panels.** Anna. Dr N Chitharanjan, Prof, Department of Structural Engineering, College of Engineering, Madras.

18. Vasantha, M. **A study on the surface modification of polyester fabrics by alkaline hydrolysis.** Anna. Dr V Subramaniam, Head, Department of Technology, Madras.

19. Venkatesh, Aruna. **Effect of heat treatment and chemical modification on the physico-chemical and functional properties of sunflower, Helianthus annuus L seed proteins.** Mysore. Dr V Prakash, Scientist-in-charge, Biophysical Chemistry Unit, Central Food Technological Research Institute, Mysore.

20. Yogender Kumar. **Thermal design and performance evaluation of vapour absorption/adsorption solar space conditioning systems.** IIT Delhi. Dr S C Kaushik, Centre for Energy Studies, Indian Institute of Technology, Delhi.

INSTITUTE OF PHYSICS

(An autonomous research institute under the Department of Atomic Energy, Government of India)

P.O. Sainik School, Bhubaneswar-751005, Orissa

Applications are invited for the one year Predoctoral Course (post-M.Sc) in Physics sponsored by the Institute of Physics, which is to commence with effect from August 1, 1992. After successful completion of the course, candidates have scope for carrying out research leading to Ph.D. degree. Those who have passed/appeared in M.Sc. examination in Physics and allied disciplines are eligible to apply. Candidates who are keen to pursue a research career and who have an outstanding academic record need only apply.

Selection of candidates will be made on the basis of written and oral tests. Those selected will receive a fellowship of Rs.1,800 per month for the duration of the course.

The prescribed application form and prospectus can be obtained from the Administrative Officer (Academic) of the Institute. Completed forms should reach the undersigned by 1st June, 1992. Candidates called for interview will be paid single round trip second class train fare.

DIRECTOR

IGNOU

Applications are invited form Indian Citizens possessing requisite qualifications for filling up the following posts in the Indira Gandhi National Open University in the pay scale shown against each plus allowances as admissible under the University rules.

1.SECTION OFFICERS Posts—5

Scale of pay : Rs. 2000-60-2300-EB-3200-100-3500

Qualification & Experience : Master's Degree of a recognised University and 5 years' experience in recruitment/establishment/purchase of stores/ registration and evaluation/finance and accounts/ general administration in University/Govt./ Autonomous Organisation/Public or private sector undertaking.

OR

A Bachelor's degree of a recognised University with at least second class with 8 years' experience in recruitment/establishment/purchase of stores/registration and evaluation/ finance and accounts/general administration in University /Govt./ Autonomous Organisation /Public or private sector undertaking.

OR

A Bachelor's degree of a recognised University with at least second class and a pass at the final examination of Institute of Chartered Accountants or a pass in SAS examination conducted by the Comptroller and Auditor General of India or equivalent there of with three years experience in general administration/finance and accounts in University/Govt./Autonomous Organisations/Public or private sector undertaking.

Age limit : 32 years

(Posts available at Regional Centres Karnal, Calcutta, Jaipur and Shillong)

2.CAMERAMAN Post—1

Scale of pay: Rs. 2000-60-2300-EB-75-3200-100-3500

Qualification & Experience : Essential : a) Diploma in cinematography from FTII or equivalent. b)2 years' experience of working with film/video camera.

Desirable : a) A Bachelor's degree of a recognised University. b) Experience in working in a television organisation. c) Good knowledge of broadcasting systems in India and abroad.

Age Limit : 35 years

3. PRODUCTION ASSISTANT-CUM-PROOF READER Post—1

Scale of pay: Rs.2000-60-2300-EB-3200-100-3500

Qualification & Experience : a) Diploma in Printing Technology from a recognised Institution or equivalent qualification.

OR

PostGraduate Diploma in Book Production. b) 5 years' experience in printing/production of text books, general publication, journals etc. in reputed publishing/printing organisation or in a Govt./Autonomous organisation dealing with printing & publishing. c) Thorough knowledge of estimating cost of production of publications. d) Knowledge of layout, design various print production details. e) Knowledge of English/Hindi.

Desirable : A Bachelor's degree of a recognised University.

Age limit : 35 years

4. SENIOR P. A.s Posts—2

Scale of pay : Rs.2000-60-2300-EB-75-3200-100-3500

Qualification & Experience: Essential : A Bachelor's degree of a recognised University with a minimum speed of 120 wpm in Shorthand and 40 wpm in Typewriting and five years' experience secretarial/Administration work as Sentogapher/PA/PS in a University/Govt./Autonomous Organisation/Public or private sector undertaking.

Desirable : Ability to do word processing on PCs/IBM-PC compatible machines.

Age limit : 32 years

5. SENIOR ASSISTANTS Posts—6

Scale of pay: Rs. 1640-60-2600-EB-75-2900

Qualification & Experience : A Bachelor's degree of a recognised University with at least second class with five years experience of drafting and noting, correspondence/general/administration/finance and accounts in University/Govt./Autonomous Orgnaisation/Public or private sector undertaking.

Age limit: 30 years

(Posts available at Regional Centres Bhopal, Patna, Bhubaneshwar and Ahmedabad)

6. PRODUCTION ASSISTANT(COMMUNICATION DIV.) Post—1

Scale of pay: Rs. 1640-60-2600-EB-75-2900

Qualification & Experience : Essential : a) A Bachelor's degree from a recognised University or Diploma in direction in TV/Film/Stage from a recognised institute. b) Proficiency in English. c) Two years' experience in Radio/TV/Films.

Desirable : a) Practical experience in production of educational Radio/TV programmes. b) Knowledge of Hindi.

Age limit: 30 years

7. PERSONAL ASSISTANT GR-II Posts—4

Scales of pay : Rs. 1640-60-2600-EB-75-2900

Qualification & Experience : Essential : A Bachelor's degree of a recognised University with a minimum speed of 100 wpm in shorthand and 40 wpm in Typewriting and three years' experience as Stenographer/PA in University/Govt./Autonomous Orgnaisation/Public or private sector undertaking.

Desirable: Ability to do word processing on PCs/IBM-PC compatible machines.

Age limit: 28 years.

(Posts available at Regional Centres Patna, Pune, Karnal, Bhopal, Jaipur, Lucknow, Calcutta, Shimla, Shillong, Cochin, Bhubaneshwar, Bangalore and Ahmedabad)

8. STENOGRAPHERS Posts—10

Scale of pay: Rs. 1200-30-1560-EB-40-2040

Qualification & Experience: Essential: Matriculation or equivalent with 80/30 wpm speed in Shorthand and Typewriting respectively and with two years' experience as Steno-typist/ Stenograher in University/Govt./Autonomous Organisation/ Public or private sector undertaking.

Desirable : a) A Bachelor' degree of a recognised University with experience as Stenographer. b) Ability to do word processing on PCs/IBM-PC Compatible machines.

Age limit: 28 years

(Posts available in Regional Centres at Patna, Pune, Karnal, Bhopal, Jaipur, Lucknow, Calcutta, Cochin and Shillong.

9. ASSISTANTS Posts—9

Scale of pay : Rs. 1200-30-1560-EB-40-2040

Qualification & Experience: Essential: A Bachelor's degree of a recognised University with three years' experience in secretarial/administration/Public or private sector undertaking.

Desirable: Knowledge of typewriting and ability to type own notes.

Age limit: 28 years

(Posts available at Regional Centres Karnal, Shimla, Lucknow, Ptana, Pune, Bangalore and Jaipur)

10. PROOF READERS GRADE-II Posts—2

Scale of pay : Rs. 1200-30-1560-EB-40-2040

Qualification & Experience: Essential: a) A Bachelor's degree of recognised University. b) 2 years' experience in Proof Reading from a reputed publishing organisation or Govt./Autonomous Orgnaisation. c) Knowledge of English/Hindi.

Desirable : Additional knowledge of any regional language desirable.

Age limit : 30 years

11. JUNIOR ASSTT.-CUM-TYPISTS Posts—32

Scale of pay: Rs. 950-20-11550-EB-25-1500

Qualification & Experience: Essential: Matriculation or equivalent with two years' experience in a Clerical post in a Govt./Semi-Govt./public undertaking/reputed private company with a typing speed of 30 wpm in English. The typing speed in respect of any of the National language will be as prescribed by the Central Govt./State Government.

Desirable : A Bachelor's degree from a recognised University with typing speed of 30 wpm.

Age limit: 25 years

(Posts available in Regional Centres at Patna, Pune, Karnal, Shimla, Shillong, Bhubaneshwar, Jaipur and Lucknow)

NOTE: For post at Sl.No.9 (Assistant), knowledge of operation of PABX and acquaintance with receptionist duty will be an advantage.

GENERAL CONDITIONS

i) The University reserves the right to:

a) relax any of the requirements with reference to age and exceptional cases and/or in the case of persons already holding comparable position on a regular basis in a University/Research Institution.

b) consider names of suitable candidates who may not have applied, on the recommendations of the Selection Committee.

c) post the selected candidates either in the headquarters at New Delhi or at any of its 16 Regional Centres located in different parts of the country.

d) prepare a panel of selected candidates for filling in vacancies of any category that may arise in the next one year.

e) not to fill up any of the vacancies advertised.

ii) The University will conduct a written test and skill test/trade test as the case may be at any place(s) throughout the country at its discretion. Candidates found eligible/qualifying in the tests will be called for interview before the Selection Committee at New Delhi or at any of the Regional Centres of the IGNOU.

iii) Since applications received may be shortlisited, merely possessing the prescribed qualifications and the requisite experience would not entitle a person to be called for a written/skill test and/or interview.

iv) No interim queries or correspondence regarding issue of call letters for test/interview of selection of candidates for a post will be entertained at any stage.

v) The age limits prescribed, is the age limit applicable to general candidates. Relaxation in age applicable to SC/ST candidates will be as per Govt. rules.

vi) Outstation SC/ST candidates called for test/interview will be paid single second class railway/bus fare to and fro to the place of test/interview by the shortest route from their place of residence on production of rail/bus tickets or photocopy thereof.

vii) The selected candidates may be liable to be transferred to any of the University's offices in the Country.

viii) Canvassing in any form will be viewed seriously and candidature of each person(s) will be summarily rejected.

HOW TO APPLY

Application forms can be obtained from the **Recruitment Cell, Block-4, Room No.-18, Indira Gandhi National Open University, Maidan Garhi, New Delhi-110 068**, in person or on a written request by post which must be received in the University office before 30-4-92. All such requests should be accompanied by a self-addressed envelope (size 13 x 28 cms) bearing postage stamps worth Rs.2. REQUESTS FOR APPLICATION FORMS WHICH ARE NOT ACCOMPANIED BY A SELF-ADDRESSED STAMPED ENVELOPE OR ACCOMPANIED BY INADEQUATELY STAMPED ENVELOPE WILL NOT BE ENTERTAINED. Candidates applying for more than one post must send their applications in separate covers. Completed application form along with attested copies of certificates in suppport of qualification, experience, age and caste etc. should reach the Registrar at the above address on or before **15.5.92**. Applications received after the due date or incomplete in any respect and/or the case of those in Government/Semi-Government/University NOT RECEIVED THROUGH PROPER CHANNEL will not be considered at all. However, they may send advance copy of their application before the due date to be followed by application through proper channel later.

Advt. No. 6/Rectt./92 **REGISTRAR**

The U.S. Educational Foundation in India will be organizing a workshop on "Introduction to Video Techniques" between June 8 and 23, 1992 for faculty of Indian universities who teach courses on electronic media at Media Center, Bangalore, where it will be coordinated by Mr. Ashish Sen.

Participants should be full-time faculty, under 40 years of age and should preferably not have participated in any such training program during the last three years.

Foundation will reimburse first class train fare to the selected participants from their place of work to Bangalore and back and will arrange board and lodging.

The last date for receipt of applications is April 15, 1992. Candidates selected by the Foundation will be informed by May 01, 1992.

Those who are eligible may write to the Foundation for an application form at the following address:

Ms. Geeta Nayar
Regional Officer
U.S. Educational Foundation in India
American Consulate Building
Mount Road
Madras 600 006.

REGIONAL ENGINEERING COLLEGE

JALANDHAR

ADVERTISEMENT NO.1/92

Applications for the following posts are invited on prescribed forms which can be obtained by sending Indian Postal Order payable at Jalandhar in favour of the Principal, Regional Engineering College , Jalandhar for Rs.5/- alongwith a self addressed unstamped envelope of size 27cm x12 cm. The applications complete in all respects should reach the undersigned by **30.4.92.**

S.No.	Discipline	Prof.	Asstt. Prof	Lecturer
1.	Textile Engineering	1	1	–
2.	Instrumentation & Control Engineering	1	1	1
3.	Mechanical Machine Design & Automation Engineering	1	–	–
4.	Chemical & Bio. Engg.	–	1	–
5.	Electronics & Comm. Engineering	–	–	1
6.	Computer Science & Engg.	–	–	1

PAY SCALES :

Professors : 4500-150-5700-200-7300
Asstt. Prof : 3700-125-4950-150-5700
Lecturer : 2200-75-2800-100-4000

QUALIFICATIONS & EXPERIENCE

The details of qualifications and experience required for each post shall be supplied along with the application. In complete and late submitted applications shall not be considered.

K.K. Dhir
REGISTRAR

Ministry of Human Resource Development

Department of Education

E.S.5 Section, New Delhi

PORTUGUESE GOVERNMENT SCHOLARSHIPS, 1992—93

Applications are invited on the application format given below from Indian nationals residing in India for the award of two nine monthly scholarships for Postgraduate studies, research, refresher course in Cultural and Artistic fields for the academic year, 1992-93.

DURATION:- Each scholarship will be of 9 months duration starting from Ist November, 1992.

QUALIFICATIONS:- Scholarships are meant for the artists, research scholars or experts and University professors in Cultural and Artistic fields who know the Portuguese Language. The applicants should hold Postgraduate degree in the concerned subject with 60% marks or above.

PASSAGE COST:- Passage Cost from India to Portugal and back will be borne by the candidates themselves or their/employers /sponsors. Subject to the availability of funds, the passage cost may be met by the Government of India provided the candidate is eligible under the rules.

LAST DATE:- Last date of receipt of applications in this Ministry is **15th April, 1992.**

PROCEDURE TO APPLY:- The applications should be addressed to Deputy Educational Adviser, (E.S. 5 Section), Department of Education, Ministry of Human Resource Development, A-1/W-3 Curzon Road Barracks, Kasturba Gandhi Marg, New Delhi-110001 on the application format given below alongwith the following documents.

a) Attested Photostat copies of all the certificates/degree starting from Matriculation/Hr. Sec. showing date of birth and academic qualifications.

b) No Objection Certificate alongwith the re-employment guarantee from the employers

c) Document of acceptance by the teaching establishment where the candidates propose to carry out their studies.

d) Two letters of recommendations.

e) Medical Certificate from Registered Medical Practitioner (MBBS) showing Physical and mental fitness of the Candidate.

f) Evidence of knowledge of Portuguese Language.

NOTES:-

1. Applications received late will not be entertained.
2. Incomplete applications will not be entertained.
3. No canvassing in any form will be entertained.
4. Employed persons should send their applications through proper channel.
5. Equivalent foreign degrees will be considered.
6. Candidates who have already been abroad for study/training /specialization/on a scholarship or on their own for a period exceeding six months are eligible to apply only if they have been in India for atleast three consecutive years after their return from abroad.
7. Applications of candidates who are abroad at present will not be considered.
8. Candidates who do not possess the requisite qualifications need not apply.
9. Candidates should have sufficient knowledge of donor country i.e. Portugal as well as of India.

APPLICATION FORMAT
FOR
PORTUGUESE GOVERNMENT SCHOLARSHIPS, 1992 - 93

1. Name of the Candidate
   (In capital letters)
2. Subject for which applying
3. a) Mailing Address
   b) Permanent Address
4. Father's Address and Occupation
5. Date of birth and the state to which the candidate belongs.
6. Whether a member of SC/ST if so, attach a certificate issued from the competent authority.
7. Academic record (starting from Matriculation/Hr. Secondary)

Paste one
recent
passport size
photograph
here

Name of the Board/ University/ Institution	Exam(s) passed	Year of passing	Division/ class with position if any	%age of marks obtained	Subjects taken

In case no Division/Class is awarded and only grading is done the conversion formula adopted may be mentioned.

8. Details of Professional/Practical/Training/Research Experience specifying the period and number of papers published, previous employment with name and date of employment only.
9. Knowledge of Portuguese Language.
10. Nature of present employment (as well as previous employment) with date of appointment, designation and the name and address of the employer.
11. Attach Sponsorship/No Objection Certificate from the present employer.
12. Have you been abroad? If so, give full particulars of the Country and the period. Also mention the year of return to India.
13. Proposed programme of study/research/training specifying.
    i) the work at present engaged in
    ii) future plans/prospects after the proposed studies/research.
    iii) nature and programme of study/research desired.
    iv) how are these related to the socio cultural and Artistic development of India:
14. Any other information.

Place:
Date: (Full signature of Candidate)

davp 511(3)92

CLASSIFIED ADVERTISEMENTS

INDIAN SCHOOL OF MINES,

DHANBAD

Advt.No.420001/92-Estt

Dated: 23 March 1992

Indian School of Mines, Dhanbad invites applications for the following posts :

1. **PROFESSORS** (15 Nos) (Rs.4500-7300) (upper age limit : 50 years)

(3 in Mining Engg with specialisation in Mine System Engg, Metalliferous Mining, and Environment; 1 in Petroleum Production Engg; 2 in Appl. Geology with specialisation in Geochemistry/Structural Geology/Coal Geology/Petrology; 2 in Mineral Engg with specialisation in Mineral Processing Engg/ Coal Preparation; 1 in Fuel Engg; 1 in Drilling Engg; 1 in Appl.Maths with specialisation in Solid Mechanics/Fluid Mechanics/Operational Research; 1 in Appl.Geophysics with specialisation in Geophysical Instrumentation/Well Logging/Interpretation Techniques; 1 in Humanities & Social Sciences with specialisation in English Language or in any other humanities subject: 1 in General Environment in the Centre of Mining Environment; and 1 in Industrial Engg and Management).

ASSTT. PROFESSORS (16 Nos) (Rs.3700-5700) (upper age : 45 years) (2 in Mining Engg with specialisation in Opencast Mining/Rock Excavation Engg; 4 in Petroleum Engg out of which 1 is for Chemical Engg background 1 for Mechanical Engg background and 2 for Petroleum Engg background/Drilling Fluids/ Drilling Technology; 1 in Appl. Geology with specialisation in Structural Geology/Geostatistics; 1 in Mech. Engg/Mining Machinery; 1 in Electronics; 1 in Appl. Geophysics; 2 in Appl. Chemistry with specialisation in Ceramics/Physical Chemistry/Electro-Chemistry; 1 in General Environment in the Centre of Mining Environment; 1 in Industrial Engg & Management; and 1 in Humanities & Social Sciences and 1 in Mine Mechanisation(Electrical).

3. **LECTURERS** (16 Nos) (Rs.2200-4000) (upper age : 35 years)

(8 posts are reserved for SC candidates and 4 for ST candidates as part of special drive for recruitment from these categories).

(5 in Mining Engg; 2 in Petroleum Engg; 2 in Appl. Geology; 3 in Mineral Engg; 1 in Statistics; 1 in Appl. Maths; 1 in Appl; Chemistry; and 1 in Mine Mechanisation).

4. **SYSTEM ENGINEER** (in Computer Centre) -1 Post (Rs. 3000-4500)

(upper age : 40 years).

5. **ELECTRONIC ENGINEER** (CISS) - 1 Post (Rs.2200-4000) (Age 35 years)

6. **LADY MEDICAL OFFICER** - 1 Post (Rs.2200-4000) (Age 35 years)

7 **ASSTT ENGINEER** (Electrical) - 1 Post (Rs. 2200-4000)

(upper age : 35 years)

8. **ASSTT LIBRARIAN** (Central Library) - 1 Post (Rs.2200-4000)

(upper age : 35 years).

9. **ASSTT REGISTRAR** - 2 Posts (Rs. 2200-4000) (upper age : 35 years).

GENERAL INFORMATION:

1. Those who have applied for some of above posts against earlier Advt.No.420007/89-Estt dated 29.12.89 and 420010/90-Estt dated 5.12.90 need not apply. However, they may send up-to-date biodata mentioning details of post applied for earlier.

2. 15% posts are reserved for SC candidates and $7\frac{1}{2}$% posts reserved for ST candidates of the posts mentioned at Sl.Nos. 4 to 9.

3. Full details regarding the posts, specialistion required etc and prescribed application form may be obtained from the office of the Registrar, Indian School of Mines, Dhanbad-826004, by sending a crossed IPO of Rs.5.00 (five only) in favour of Registrar, ISM, Dhanbad, along with a self-addressed envelope of size 30cm x 12 cm affixing postage stamps of

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INDIAN COUNCIL OF MEDICAL RESEARCH

Special Recruitment Drive for SC/ST

(Advt. No. 11/92 Hqs. Office)

Applications are invited **upto 24.4.1992** for the following posts in the Hqs. office of the Council at New Delhi.

1. **RESEARCH OFFICER** (Stat) (1 Post) : Reserved for SC (ST candidate will also be considered if suitable SC candidate is not available) Rs. 2200-75-2800-EB-100-4000 + usual allowances.

Qualification & Experience : Essential : Ist class M.Sc. in Statistics or Mathematics. **Desirable:** (a) Three years' experience of working on interactive computer systems using data base packages. (b) Training in programming in FORTRAN/BASIC/COBOL from a recongised institution. **Job Description :** I. to assist in the scrutiny and coding of the extramural research proposal received by the ICMR : regular updation of the information system, scrutiny of reports generated by the Management Information System, Statistical analysts and presentation of data using the information available with the system. II: to assist the Asstt. Editor/Editor-in-chief, in the statistical scrutiny and checking of manuscripts submitted to the Indian Journal of Medical Research.

2. **TECHNICAL ASSISTANT** (1 Post) : Reserved for ST (SC candidate will also be considered if suitable ST candidate is not available). Rs. 1400-40-1800-EB-50-2300 + usual allowances. **Qualification & Experience: Essential:** Master's degree in Life Science. **Desirable:** Experience in carrying out and/or providing technical and administrative support for scientific activities, preferably in bio-medical research.

3. **JUNIOR STENOGRAPHER** (1 Post) : Reserved for ST (SC candidate will also be considered if suitable ST candidate is not available) Rs. 1200-30-1560-EB-40-2040 + usual allowances.

Qualification : Matriculation/Higher Secondary or equivalent examination plus 100/80 w.p.m. speed in English Stenography.

General Conditions: Age: For Post No.1: Below 45 years. **For Post Nos.2 & 3:** 30 years (inclusive of age relaxation as per Govt. rules. Candidates called for interview will be paid 2nd class return fare on production of documents. N.P.A is admissible to medical graduate only as per rules of the Council. Private practice is not allowed. Service under the Council is pensionable.

Applications from employees working in Govt. funded research agencies should be forwarded through proper channel.

For Post No. 1 : Application forms and other details can be obtained from the office of the Director General, Indian Council of Medical Research, Ansari Nagar, New Delhi-110 029.

For Post Nos.2 & 3 : Applications on plain paper giving full particulars should be sent to the Director-General, Indian Council of Medical Research, Ansari Nagar, New Delhi-1100 029, along with two copies of the latest passport size photograph and an attested copy of certificates/testimonials including Caste Certificate. Separate application should be submitted for each post, clearly indicating the Advt. No. reference and post applied for.

Forms/applications duly completed should be sent to the **Director General, Indian Council of Medical Research, Ansari Nagar, New Delhi-110 029.** Incomplete and late applications will not be entertained.

A.I.U. PUBLICATIONS

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Address Enquiries to :

Deputy Secretary (Publications)
Association of Indian Universities
AIU House, 16 Kotla Marg, New Delhi - 110 002
Telephones : 3310059, 3312429, 3313390, 3312305
Telex : 31-66180 AIU IN GRAM : ASINDU

INDIAN INSTITUTE OF TECHNOLOGY, BOMBAY

ADMISSIONS TO

Ph.D./M.Tech./M.Des./M.Sc./DIIT PROGRAMMES

For Autumn Semester, 1992-93 Session

1. DOCTOR OF PHILOSOPHY (PH.D.) in

(i) Aerospace, Chemical, Civil, Electrical (including Electronics) Mechanical, Metallurgical Engineering and Computer Science & Engineering.

(ii) Chemistry, Earth Science, Mathematics and Physics.

(iii) Humanities and Social Sciences (Economics, Psychology, Philosophy, English, Sociology).

(iv) Biomedical Engineering, Corrosion Science and Engg., Energy Systems Engg., Enviromental Science and Engg. Industrial Engg. and Operations Research, Industrial Management, Materials Science, Reliability Engg., Systems and Control Engineering.

Eligibility:

(i) Master's degree in Engineering/Technology.

(ii) A First class Master's degree in Science or a First class Bachelor's degree in Engineering/Technology.

(iii) A Master's degree in Humanities/Social Sciences with a minimum 55% marks.

(iv) M.B.B.S. with one year's internship completed or M.Sc. in Biological Sciences, Occupational/Physiotherapy.

2. MASTER OF TECHNOLOGY (M.TECH.) in

(i) Aerospace, Chemical, Civil, Electrical, Mechanical, Metallurgical Engineering, Earth Science, and Computer Science & Engineering.

(ii) Corrosion Science and Engg., Energy System Engg., Environmental Science and Engg., Industrial Engg. and Operations Research, Industrial Management, Materials Science, Systems and Control Engg., and Reliability Engineering.

Minimum Qualifications For Admission:

A. 3-semester M.Tech. (with scholarship)

B.Tech./M.Sc. or equivalent with a valid GATE score.

B.M.Tech. (Sponsored)

(i) B.Tech./M.Sc. or equivalent with First class with a professional experience of two years or more,

(ii) If the professional experience is less than two years, a valid GATE score is required.

3. 4-semester MASTER OF DESIGN (M.DES.) in

Industrial Design and Visual Communication.

Minimum Qualifications For Admission:

(i) M.Des. (Industrial Design): Bachelor's degree or equivalent in Engineering/Architecture or Professional Diploma of NID, Ahmedabad, (5-year programme).

(ii) M.Des. (Visual Communication): Bachelor's degree in Engineering/Architecture, B.F.A. (Applied Art) G.D. (Art). Five years Professional programme or Professional Diploma Of NID Ahmedabad.

Candidates for M.Des. must have valid GATE/CEED score.

4. MASTER OF SCIENCE (M.SC.) in

Applied Geology, Biotechnology, Chemistry (with specialization in Inorganic, Organic or Physical Chemistry), Mathematics (with specialization in Pure Mathematics, Applied Mathematics, Computer Science or Statistics and Operations Research) and Physics.

Minimum Qualification for Admission:

First Class in B.A./B.SC. with the following stipulations-

(a) Applied Geology – Geology major with Physics/Chemistry/Biology as subsidiary,

(b) Biotechnology – Chemistry or Biochemistry in the final year.

(c) Chemistry – Chemistry in the final year.

(d) Mathematics – Mathematics/Statistics as one of the subject in the final year.

(e) Physics – Physics (major) with Mathematics as subsidiary.

For (a), (b) and (c) the candidates must have taken Mathematics in 10 + 2 level.

5. General Information

(i) Details of prescribed qualifications, specializations available, scholarships etc. will be found in the Information Brochure. For admission with scholarship candidates must hold GATE, UGC, CSIR, CEED or BIOMEET results.

(ii) Information Brochure and Application forms for all programmes may be obtained from the Deputy Registrar (Academic), Indian Institute of Technology, Powai, Bombay-400 076, on request accompanied by Demand Draft of value Rs. 15 for Ph.D. and M.Des. or Rs. 35 for M.Tech. and M.Sc. The Demand Drafts should be payable to Indian Institute of Technology, Bombay, and drawn on any scheduled bank. A self-addressed stamped (Rs. 3/-) envelope of size 77 cm x 12 cm superscribing the name of the programme for which the form is desired must be enclosed along with the request.

(iii) Application forms will be available from 7th April onwards. Last date for supply of blank forms is **15.5.92.** Completed application forms must reach the Institute at the address specified in the brochure by **18.5.92.**

(iv) Seats are reserved for candidates belonging to SC/ST category as per rules and these students are given special consideration for admission. However, they are also required to qualify at the test/interview as per the relaxed academic norms prescribed for them.

(v) Candidates who have appeared/are going to appear at the qualifying examinations may also apply.

(vi) Forms may also be collected personally from the Institute's Academic Office on submitting the required demand draft on all working days from 10 a.m. to 12.30 p.m. and 2.30 p.m. to 5.30 p.m.

6. TEST/INTERVIEW

The final selection of admission to Ph.D./M.Tech./M.Des. will be based on performance at the test/interview to be conducted at the Institute and the GATE or equivalent Examination score. For the M.Sc. programmes the selection will be on the basis of performance in written tests.

DEPUTY REGISTRAR (Academic)

Advt No. G-9/92-93

UNIVERSITY NEWS, MONDAY, APRIL 6, 1992 Regd. No. R.N. 7180/63 Postal Regd. No. DL–11106/92

Roorkee Varsity Convocation

From L to R : Dr. V. S. Arunachalam, Scientific Adviser to the Defence Minister & Secretary, Department of Defence Research & Development, who delivered the convocation address, Shri B. Satyanarayana Reddy, Governor of Uttar Pradesh & Chancellor and Dr. H. C. Visvesvaraya, Vice-Chancellor of the University.

Published by SUTINDER SINGH, on behalf of the Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi-2.
Grams: ASINDU. Phones: [illegible] [illegible], 3312429, 3313390, 3323097 and 3712435. Telex : 31-66180 AIU IN
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University News

ISSN-0566-2257

G. P. T. R.

MONDAY, APRIL 13, 1992

Rs. 5.00

Avinashilingam Institute Convocation

HOME SCIENCE AND HIGHER
EDUCATION FOR W
DEEMED UNIVERS

R to L : Dr. Arutchelvar N. Mahalingam, Chairman, Sakthi Group of Companies, who delivered the convocation address, Shri C. Subramaniam, Governor of Maharashtra & Chancellor, Dr. Rajammal P. Devadas, Vice-Chancellor of the Deemed University and Smt. Sakunthala Subramaniam.

SANJAY GANDHI POSTGRADUATE INSTITUTE OF MEDICAL SCIENCES, POST BOX NO. 375,RAEBARELI ROAD, LUCKNOW-226 001(U.P.)

Last Date: 30th April 1992

Applications are invited on prescribed form for the following faculty positions :

Sl NO.	DEPARTMENT	ADDL. PROF.	ASSOC. PROF.	ASSTT. PROF.
1.	Urology	01	01	-
2.	Endocrinology(Surg.)	-	01	-
3.	Radiology	-	-	02

ESSENTIAL QUALFICATION & EXPERIENCE: Candidates should have completed 10, 06 and 03 years of teaching and research experience after postgraduation in a recognized teaching institution for Additional Professor, Associate Professor and Assistant Professor respectively. Candidate with experience or specialization in Neuro-Urology will also be considered for the post of Associate Professor in Urology. D.M./M.Ch. qualifications and teaching experience are desirable as per MCI recommendations.

UPPER AGE LIMIT: 50 years relaxable by 5 years in case of Goverment Servants. Scheduled Caste and Scheduled Tribe candidates and exceptionally qualified applicants.

PAY-SCALE :	FOR ADDL. PROFESSOR	Rs.5100-150-6300	Plus NPA
	FOR ASSOC.PROFESSOR	Rs. 4100-125-4850-150-5300	
	FOR ASSTT. PROFESSOR	Rs. 3500-125-4500	

Application forms may be obtained from Executive Registrar of the Institute on payment of Rs.25 through Bank Draft in favour of Director, SGPGI, Luncknow, accompanied with a stamped (Rs.13 only) self-addressed envelope (size 10" by 12").

Candidates residing abroad may submit their applications on the plain paper with bio-data latest by 15th May, 1992.

GENERAL CONDITIONS:

1. Incomplete applications and those received after the last date will not be considered.
2. Reseervation will be as per Government Rules.
3. In case of non-availability of suitable candidates for the higher post, candidates may be offered lower position in that particular speciality by down grading the higher post.
4. Candidates in employment should send their applications through proper channel. However, advance copies will be accepted.
5. Exceptionally qualified candidates having meritorious academic records or specialized experience may be given advance increments on the recommendation of the Selection Committee.
6. The number of posts indicated above is provisional and subject to change without prior notice.
7. Director reserves the right to reject any or all applications without assigning any reason.

NOTE: Those candidates who had applied earlier for any of the above posts need not apply again.

DIRECTOR

UNIVERSITY NEWS

VOL. XXX APRIL 13
No. 15 1992
Price Rs. 5.00

A Weekly Chronicle of Higher Education published by the Association of Indian Universities

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Editor :
SUTINDER SINGH

Restructuring Curriculum at Higher Education Level

R. S. Trivedi*

The Present Education Scenario

Before we study university as an institution of human resource development, let's pay attention to the overall existing education scenario.

(i) For every 10 students entering in class one, only one student is able to reach the portals of higher education.

(ii) 50% of children above the age of 10 are still illiterate.

(iii) 20% of children from the lower economic rung have not seen the school.

(iv) Enrolment in primary school has hardly gone beyond 90%.

(v) a. Out of 6,500 colleges nearly 2,000 colleges are non- viable.
b. 30 million graduates are unemployed.

(vi) Imbalances in infrastructure of educational institutions are obvious proving a hindrance to achieving equality of opportunity.

(vii) A typical polarisation with a large mass of illiterate and unskilled and consequently unemployed on the one hand and mass of people who are over educated and hence unemployable on the other has resulted.

(viii) Education seems to have remained neutral one, a realistic issue of polarisation.

(ix) The urban-rural dichotomy is not only sustained but is also treated in an unbalanced manner. The population ratio of 20:80 has been reversed in actual social benefit in as much as 80% of the benefits go to 20% of urban population.

(x) Overall 30% of the top income group is the main beneficiary.

The scenario reveals that equality of opportunity in education remains at the ethical level. We have not been able to provide education programmes to all and sundry.

The social system is suffering from a few inherent dichotomies: (a)rural-urban; (b) elitism-egalitarianism; (c) sophisticated technology-appropriate technology; (d) charisma-democracy.

These dichotomies have to be overcome before we, as a nation, are affected by a Second Revolution accelerated by (i) Micro- electronics, and (ii) Bio-technology. Placed in this situation we are looking forward to educational leadership. University as an institution is at the apex. Is university as, an institution, capable of providing leadership and help clearing the cobwebs of dichotomies?

If university is analyzed as a system in the form of its inputs, through-puts and outputs, we find that the system is almost cracking. The popularly known ' Ivory Tower' of the university is almost leaning. There are several constraints that are responsible for such a state of affairs. The higher education unfortunately is no more higher. It has proved to be longer. It is longer education just completing the ascending curricula.

**Chairman, Higher Secondary Education Board, Gujarat State, and Ex-Vice-Chancellor, Bhavnagar University.*

The constraints are :

(i) *Structural constraint:*

The university is rigidly bound by its structural role. It prevents the university from playing a creative role.

Faculties and other authorities play roles. This is applicable to Deans, Chairmen, Board of studies and even Vice-Chancellors. This results in role-constraints.

(ii) *Financial Constraint:*

The budget is expenditure-oriented and not programme-oriented. Measure of efficiency is still to be evolved. Developmental returns to the society are still the distant realisation.

(iii) *Teacher and student community is another constraint:*

Teaching community is one of the crucial inputs and is hardly committed to academic values.

Student community is utilized rather than educated.

At worst it is being used to steel the political muscles.

Because of the constraints, university education is under pressure when confronted with forces reacting from political, democratic and industrial demands for a changed manpower. University education, as we experience today, has remained at evocative and symbolic level. It has become status-oriented.

University education so far has not been able to respond to newer demands. Students are to be helped to see the reality of the developmental problems.

The Need for Change

A radical change in course structure and at the same time rigour in education are the requisite needs. Students are to be counselled not to run away from hard work. Every new challenge is not to be looked upon as a threat but as a challenge to be met. The young student is meaningfully to be exploited in this direction. Students must be made to realize that the new social order won't depend on luck or accident but it is to be determined by their perception, behaviour and becoming.

This type of institutional behaviour will help the university to play the real role of transformation and development.

Ethos, content, operation of the entire system has to be changed. The non-monetary inputs like planning, managing human resources, providing adequate feedback will help build up the requisite ethos.

At the operational level, role of all the authorities, is to be clarified and made more specific. Election does not provide adequate means for the role play; for, the criteria for elections are borrowed from political institutions. Merits, academic achievements and contribution towards building up human relationships could be the new criteria for elections in the university operational mechanism.

Research culture is essential in the developmental context. Innovation and research are the hall marks of today's higher education. R & D is the requisite item in educational industry. It is only the university that can provide R & D to educational industry.

Strategy & the N.E.P.

In a society seeking to move into the world of modern technology, the feudal attitude is the handicap. Higher education in general must be related to the technological revolution already transforming modes of production, transportation, communication techniques, management, and even organization systems.

A few measures have been suggested in the Programme of Action document of the New Education Policy. These are

(i) Consolidation and expansion of institutions;
(ii) Development of autonomous colleges;
(iii) Redesigning of courses;
(iv) Orientation of teachers;
(v) Strengthening of research;
(vi) Improvement in efficiency; and
(vii) Creation of structures for coordination at the state and national levels.

Steps visualized and approach to implement:

(1) Institution of Staff Colleges—at present in Gujarat— Saurashtra and Gujarat, Universities are given Staff Colleges and in all there are now 44 such Staff Colleges.

(2) Upgrading Teachers' Colleges to organise continuous inservice programmes for school teachers.

(3) 21 autonomous colleges already started and as many as 500 autonomous colleges are still to be developed.

(4) College Development Councils are already in existence.

(5) The U.G.C. has set up Curriculum Development Centres.

(6) Model course material in 15 subjects are to be

developed in the form of audio-video cassettes with the help of the best available teachers.

(7) The international centre of Science and Technology Education may be utilized to coordinate and develop curricula in the field of science and technology.

(8) Accreditation and assessment machinery to be improved and made more reliable. Steps are being taken in a few evaluation-innovations.

(9) To establish a networking arrangement of selected institutions from all parts of the country by linking them together through a computer data network with terminals for each to enable sharing of information, data-bank, library and computation resources, consultancy, promotion of interaction between research and academics.

(10) Science and Technology Councils have been set up in 18 States including Gujarat and four Union Territories.

These measures are envisaged and some of them are directly implemented to enable higher education to play its role. It should not be forgotten that unlike industrial revolution , the electronics revolution deals with the flow of electronics and directly affects our nervous system. Information is a source of power in the new society and handling more information in a given time is important. This ability is the outcome of higher education. People who can get vital information first and who can select quickly to suit their needs are in a very powerful situation.

Role of Higher Education & Curricular Changes :

At present University has no human resource development policy. This should be made clear. This is possible if it has a special department of R & D. The inputs, through-puts and outputs could be examined thoroughly. Is there a national policy showing, directions to those who want to make teaching a career? This is very important. Teaching is not everybody's cup of tea.

As university and as autonomous body, universities should not remain satisfied with marginal availability of resources for change. New policy demands innovation and change. Pattern of maintenance and its grant are outdated.

The tragic situation with Indian universities is that for any innovation incentive or feedback is totally absent. Monetary incentives are limited by the financial constraints and freedom, creativity and above all a feeling of romanticism are limited by an inherited backwardness in administration and management. This is the new change desirable along with the new curricular changes. This has to be based on the principles of (i) relevance (ii) integration, and (iii) balance.

APR 1992

The suggested changes in restructuring curriculum is in the context of the above-mentioned principles. The curricular structure at the undergraduate level in the form (i) core- subjects, (ii) interdisciplinary areas, (iii) applied courses, and (iv) Job-oriented courses. Similar approaches have been tried at universities like SNDT, Shivaji and Marathawada. Poona university undertook a pilot project in restructuring curriculum. These universities attempted to restructure on the guidelines given by UGC.

Arts Faculty

It is time for the Arts Faculty to review their curriculum. The existing framework is merely the extension of higher secondary education. In fact, both in content and technique, it should be replaced by higher intellectual rigour and higher level content so as to enable students to have future in their bones.

With structural framework as discussed here subjects like Ecology, Population Education, Cooperatives, Managerial Organisation, Behaviour Sciences, Linguistics and Anthropology, Sociology, Economics, Linguistics and Analytical Philosophy, Social and cultural History, Public Administration, Legal Education, Pedagogical 'courses', Intercultural Studies and Futurology, Public Relations, Book Publishing, Journalism, Library and Information Science, Entrepreneurship etc. could be introduced at the 3-year degree level.

Note: (1) Pedagogical Courses – students opting for these papers could be given credit if they desire admission to B.ED. courses.

(2) Futurology (a) subject be introduced with a view to acquainting the students with alternative images of the future. They should be further acquainted with assumptions about the kinds of jobs, professions and vocations that may be needed in future; assumptions about the kind of family forms and human relationships that will prevent the kind of moral and ethical problems that will arise: the kind of technology that will surround us and the organisational structures with which we will be required to deal. (b) This area could also be linked with Social Sciences, Population Education and Education as a

discipline.

(3) Journalism: This subject be linked with languages and social and cultural history.

Commerce Faculty

Subjects in this faculty should be now re- arranged under Management Science and subjects like Banking, Auditing, Accountancy be introduced in the Arts Faculty or be treated as Professionally-skilled subjects in the job-oriented courses.

Science Faculty:

Here the structure envisaged and discussed earlier suits adequately. More applied and job-oriented courses could be introduced at the undergraduate level. New areas in oceanography, biotechnology, environmental science, electronics etc. be now thought of in its applied forms.

General Suggestions:

A. A few credit subjects such as Community Service Interior Decoration, Commercial Art and Advertising, Home Making, Guidance and Counselling, Integrated Child Development Programme Orientation and PRO Training, Extension Training, Adult Education etc. be introduced and institutional certificates be awarded.

B. Institution like Resource Learning Institution be considered.

C. Board of studies be constituted as Humanities Board of Studies, Social Science Board of Studies, etc.

D. A separate Board of Innovation, Experimentation and Research be instituted.

E. R & D section be made obligatory if colleges are autonomous institutions.

F. Community Colleges with vocational courses be started:

Curriculum
(1) Applied course
(2) Job-oriented
(3) Foundation courses
(4) Workshop Experiences.

G. Deans and Heads of the University Departments are colleagues and not rivals in developing and implementing research programmes. Research is both individual as well as cooperative.

Therefore, at the university level researches in the inter- disciplinary area are very necessary. Industries could be linked with the university programmes through research.

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System Approach of Understanding the Educational Institution

Yoginder Verma*

Education is the largest enterprise in our country in which about 15 crore people are directly involved. Their activities and behaviour are influenced by the developments taking place inside and outside the institutions they are attached with. The educational managers, teachers and non-teachers often hold the bureaucrats, politicians and society responsible for the malfunctioning of educational institutions. The real causes can be identified only though a proper diagnosis. It is believed that educational institutions are not functioning in the manner they should operate in order to achieve their objectives. Indiscipline, violence, chaos, low quality education, corruption etc. are the main symptoms of troubles in these organisations. The main reasons advanced are underfinancing, political interference, degeneration of values in the society, erosion of autonomy, bureaucratic interference, irrelevant knowledge etc. In the following paras, an attempt has been made to understand the functioning of educational institutions in system perspective.

An educational institution is a system composed of certain components or subsystems which assume their arrangement, interrelationships and interdependency in such a manner that its entity is identified separately from its external environment. The system comes into existence in order to accomplish certain objectives. Broadly speaking, the objective of educational institution is to develop a man into an integrated personality equipped with certain knowledge, skills and values. In this process, it is engaged in the activities of teaching, learning, generation of knowledge, research and management. The educational system is composed of following components:

1. Inputs: People (students, teachers, employees etc.); information (books, TV, journals etc.); materials and equipments (buildings, scientific equipments etc.); community influences; financial resources.
2. Throughput: Teaching; learning; behaviour; research; extension.
3. Output: Knowledgeable persons; knowledge; values; technology.
4. Feedback: Pass percentage; employment; class discipline and attendance; library attendance; formal and informal interactions; research studies; organisational climate; job satisfaction.
5. Environment: Immediate community; national character; socio-economic structure; political and bureaucratic influences; technological advances and globalisation.

The above parts function in an interactive manner. The system receives inputs from the environment. These are utilised for the accomplishment of its objectives. The outcome of system's function appears in the form of knowledge, knowledgeable persons, values etc. The relationship between inputs, outputs and throughputs is maintained through the feedback system. The education system operates within an environment which is itself mobile and complex in nature. The currents of change swaying in societal environment exert dominant impact on educational institutions as most of the inputs, outputs, and components of thought have open inflow from it. All pervasive cult of violence, divisiveness on different bases, galloping inflation, rising unemployment and low concern for national prosperity have further deepened the crises by weakening the fibre which binds different elements of educational system.

Subsystems

The main components of subsystems which constitute the system of an educational institution can be classified in different ways. Each component has different parts or subsystems. These parts or subsystems work as independent systems on the similar pattern as a system works. All the subsystems of a system tend to balance their objectives and activities to suit the requirements of other subsystems. In the ultimate analysis, all the subsystems chase the objectives which finally suit to their collective existence. In an educational institution we can identify various relationships by understanding its subsystems and their functioning.

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1. *Physical and Formal Procedures* : This subsystem includes buildings, laboratories, books, rules & regulations and procedures. This component is tangible and gives physical shape to the institution. To an outsider, this subsystem provides the first glance. These are the basic ingredients which infuse vitality in the system. If this subsystem is strong all other subsystems will positively move. Students will be motivated to learn, teachers will get job satisfaction, community will attach high reputation and management will have more time to attend to the development of better academic environment.

It is argued that the organisational climate is largely determined by the physical component. Adequate accommodation for classrooms, libraries, sports and cultural activities generates congenial working conditions for the teachers on the one hand and better learning logistics for students and research scholars on the other. The rules, regulations and procedures bind the activities of different subsystems on the principles of equality, justice and efficiency. It is pertinent to note that other subsystems and megasystems largely influence the contents of this component. A majority of institutions does not possess requisite facilities. This is attributed to many factors such as government's apathetic attitude, mismanagement of funds, passive concern of society etc. The privately managed educational institutions are observed to be more enterprising. They add to this component quickly. They firmly implement the rules, regulations or modes of behaviour as adopted by them.

The main concern of educational management remains to properly manage this subsystem, particularly in our situation where the education relies more on government support. As our country is passing through an economic disaster, education is the main victim. It continues to suffer from financial cuts at the time of allocation as well as disbursement of funds. The formal procedures, rules and regulations as adopted by the institutions are not often rationalised. This leads to indiscipline, disobedience, and incongruities in goals and practice.

2. *Technological System* : Every educational institution utilises certain technological instruments for imparting education. These tools are comprised of methods and techniques of teaching, learning, research and management. The effectiveness of educational enterprise depends upon the choice of methods and procedures. For example, the use of black board is the most convenient method. It is also held as low cost but more effective method. In the recent decades, some new equipments such as overhead & slide projector, TVs & VCRs and computers are available. This availability of such facilities cannot guarantee effective teaching. Their effectiveness and utility will be low until teachers are trained to use them. The concepts of country wide schools is picking up. It has been possible due to wide network of television system. But now many institutions are using it effectively, it is difficult to say.

With the modern technology, the learning and teaching can be much simplified. There are many methods and techniques which involve low expenditure but are very effective. Some of these include demonstrative teaching, visits to industries and nature, group exercises, questioning, creativity exercises, case studies, games, simulation exercises etc.

The management follows certain techniques in managing various subsystems. What techniques it adopts will determine the process encompassing inter and intra relationships of a system. Decision making, motivation, leadership, communication, planning and coordination are certain functions of management. Their execution calls for adequate skills. Technical skills are entirely developed by training. The nature of effectiveness of management depends upon the strength of this component. The present Indian education system suffers from the shadows of bureaucracy. The procedures and methods utilised in decision making are largely outmoded and many times inappropriate. Delays and disorders are the outcomes of malfunctioning of bureaucracy. The modern methods and procedures do not find much receptivity due to the resistance of educational administrators for change. This subsystem stands largely affected by political and government bureaucracy.

3. *Dominant Coalition* : The expectations, mission and behaviour of a society is reflected in the functioning of its educational institutions. A subsystem of the institution works as a link between the outer systems and the institution. This component transforms social expectations into the educational activities. We find dominant coalition in the form of top management in an educational enterprise. It includes Education Minister and other representatives of public who determine the choice of objectives and formulation of policies. At the institution level, the dominant group is composed of head of the institution, management committee and other decision making bodies having representatives of outer system.

The dominant coalition lays down not only policies and rules but also develops organizational culture. We observe that certain educational institutions are imparting education more effectively because the dominant coalition has lofty ideals, high order objectives and pious approach in their management. Sathya Sai Institution of Higher Learning is an example of the effectiveness of this subsystem.

4. *Teacher* : Among all the subsystems of educational enterprise, teaching is the critical agent of change. It is he who acts as a behaviour modifier. He is the leader who creates behaviour and puts the system into motion. He can be called a machine which is involved in processing and refinement of the product. But teacher being a human system differs in many respects from machine system. Machine is a mechanical system but a teacher is a social system. The social forces, educational qualifications, experiences, skills and values determine the functioning of this system.

Time and again, fingers have been raised about the non- effectiveness of this system. As already mentioned, this is a critical system which emits the currents of change. If this system is weak and subject to the ill-effects of other systems, education cannot achieve its objectives. Unfortunately, this system has not only decayed in quality but also become too weak to cull through the ripples of the influences of other systems. This system has to become stronger by way of improved educational skills viz. teaching, research, extension and management. Since a teacher brings with him the values, attitudes and knowledge learnt in the society, he cannot be expected to behave more differently than other citizens. But a better orientation and development process can make him capable of performing his role effectively.

5. *Student*: Like a teacher system, student system is also a social system. Individuals enter educational institutions in order to acquire skills and knowledge for earning livelihood and lead a better life. They have high expectations from education. In India, the students expect immediate government job after the completion of certain level of education. But government has not been able to fulfil their aspirations. Resultantly, the wide spread phenomenon of unemployment has compelled them to stay in educational institutions just waiting for job. 'Baby sitting' spoils the environment of college/university campuses. They become the outlets for expressing anguish and frustration. It happens so when other subsystems *per se* and the system as a whole do not cater to their needs and aspirations.

Students represent the societal expectations from education. They are social beings and carry along with them the values, needs, expectations and behaviours learnt during their brought-up in the society. Each subsystem must respond to their value structure but in fact it does not happen so. Therefore, we notice a mismatch between values of student and organisational culture. Our institutions provide a culture which is counter- productive to students growth. While students expect patronage, delicate care and relevance of education in their lives, our institutions put them to an unresponding situation in which they find no direction, encouragement and climate channelising their energies into productive activities.

Generally, in higher education, the students have more freedom to utilise their time. This produces negative effects on their development. They indulge in uncivilised activities and learn anti-work values. This subsystem is very important but most neglected one. In fact, all other subsystems exist to attend to the needs of this section.

The interactions among these subsystems produce an organisational culture which largely affects the overall image of the institutions and the morale of people working in them. The effectiveness of an institution is attributed to the nature of culture it possesses. We come across both high and low standard institutions. Their standard is attributed to the culture prevailing in them. The dominant coalition and teacher subsystem play a critical role in determining the culture. Healthy values shared among the people create better culture. The management style of top management has much to do in the evolvement of a culture. This system provides a mechanism for socialisation and further motivating the members. The components of social system directly or indirectly work upon the creation of a culture.

Environmental Forces

Educational institution does not exist in a vacuum. The environmental forces govern its basic existence. Most of the time these forces are found stirring the functioning of the system. We can study these forces under the following four major heads.

1. *Economic* : The economic prosperity is the outcome as well as the input of the educational system. It is observed that economically developed countries have sophisticated and development — oriented education system. These economies spare more resources to education. They consider it productive investment. In less developed world, the object poverty suppresses people to the level of subsistence. They remain uneducated and under-developed. The contemporary Indian economy is experiencing the violent blows of economic adversaries. The main victim of this crisis is education. The government has less to spend and people have less to avail the educational facilities. With the devaluation of money, increasing inflation, disequilibrium between

population growth and economic development, inequitous distribution of fruits of development, emergence of extravagance market, frightening trap of debt, rising unemployment, and increasing wastage of resources, education has fallen victim to resource crunch. The dream of sparing six present GNP on education has become utopia.

Economic constraints have nursed a number of corrupt practices in the educational institutions. Education is being sold by way of tuitions, capitation fees and misutilisation of resources. The well-to-do section can afford more resources in this bargain while the needy for want of resources remain deprived. The subsystems of education institutions remain under threat from above economic abnormalities.

2. *Socio-Cultural*: Socio-cultural factors influence the educational institution in a number of ways. Student, teacher, dominant coalition and management subsystems are directly affected by values, norms, aspirations and codes of conduct of the society. Unfortunately, today, our society is faced with such forces which generate disharmony, violence and disintegration. Main forces are the convulsions caused by divisiveness, widespread illiteracy, disruption of joint family system, degeneration of values etc. Disorders in the social milieu have led to indiscipline, irrelevance, disinterest, and mistrust in the educational institutions. Students and teachers do not meet in an environment of building-up a scientific temper and egalitarian society.

Our culture is rich in traditions, knowledge and values. The educational subsystems have to derive strengths from them and take lead to maximise their utilisation. The fabric will tear out if teachers and management do not rejuvinate the weakening threads and smoothen their relationships.

3. *Political* : The political environment determines the policies, resources and management of educational institutions. In the recent past, the country has been rule by minority governments. This has given rise to manipulated, low value and regional politics. Bureaucracy has dominated the government administration. Instability poses a great challenge to the coming generation. Educational institutions have become nurseries of politics with the reduction of voting age. Moreover, the students feel insecure and find no future associated with the degrees they obtain.

The politicians interfere in day to day affairs of education. The appointment and removal of educational managers has become the prerogative of politicians. In a number of cases, the Vice- Chancellors have been removed with the change of government. The politicians have helped the bureaucracy to spread its roots of delays, discretions, inefficiencies and corruption in these temples of learning also. Policies should be long term but our policies are changed with the change of Minister of Human Resource Development. Resultantly, no consistent system of education exists. The work culture and accountability is almost disappearing from organisations due to low value politics played by poor quality politicians. The educational institutions cannot remain insulated from such currents. We observe that the management, teachers and students largely disown their accountability. There is a common talk of autonomy. But autonomy without accountability is false concept. It is not only outside politicians but also inside politicians who do greater harm to the institution.

4. *Technology* : Technology affects education at different levels i.e. development of courses and curricula, teaching, linkage of education with society, effectiveness of management and quality of research. The technology propels the standard of education in terms of learning, research, teaching and extension. The quality of available technology in our country is low in terms of our realities. Large intake in the educational institutions prohibits the application of traditional as well as modern technology. All the methods and procedures prove to be inadequate or inappropriate. At the same time revolution in printing, information system and transportation has opened-up new vistas in educational process.

The technological progress at the international level has added a number of methods, techniques and machines to the educational process. This has helped in the generation and transmission of knowledge. Its relevance in terms of Indian realities may be limited. We relied more on imports of hardwares but lack necessary softwares and operating skills. The maintenance of imported hardware is additional problem. Another dimension is obsolescence in technology and our slow progress in developing our own technology. Resultantly, the educational institutions continue to rely on traditional technology for coping up with modern problems. This breeds inefficiencies.

5. *International Environment* : Today when the distances between nations are eliminating due to informational and transportation revolution, any country cannot think of remaining aloof. Its polity, society and economy experience significant shocks and tremors due to changes in any other nation. International influences tend to create new challenges and opportunities for the educa-

tion system. Innovations open up new avenues and directions for research and studies. The need for new curriculum is materialised in view of society's emerging expectations. Social currents are largely affected by demonstration effects cutting through the national boundaries. International institutions such as IMF, UNO, UNESCO etc. exercise direct influence on the economy, education system and polity of the country. Whatever are the influences they are reflected in the education system.

Conclusions

From the above analysis, we arrive at following conclusions:

1. The objectives of education need to be continuously revised and reformulated in the light of changing aspirations and needs of the society and subsystems.
2. In order to realise the goals of education, the relationships among different components of educational institutions are to be strengthened so that influences are properly utilised and desired currents are emitted into other parts of the social system.
3. The strength in education system will come only through planned interventions leading to the development of its subsystems such as teachers training, moral education, continuous reviewing of curriculum etc. Since these subsystems, certain interventions at social level will be inevitable.
4. No curriculum will be relevant until it is linked with the current needs of the immediate society and the nation as a whole.
5. The relationship between teacher and student will be determined by the networking among various elements in the education system and change in the attitudes of teachers to a great extent.
6. The education system sets the direction and velocity of change in different parts of the society which in turn comes to it in the forms of inputs and environmental pushes and pulls. Therefore, educational managers need to be highly motivated and trained to properly identify and utilise them.
7. The dominant elements in the composition curb the influences of other subsystems and suprasystems. It gives the impression that a particular subsystem is the root cause of current state of affairs. In fact, the problems are to be understood in a holistic manner.
8. Multi-level linkages based on mutual welfare, need to be forged with media, politics, bureaucracy, voluntary groups and education for the realisation of educational goals.
9. Each component of education system is mobile and subject to change from time to time and place to place. The level of its homeostasis, is mainly maintained by the dominating subsystems. Unfortunately this level has come down due to the supremacy of ill-effects of certain stronger components and passive working of other ones.

Undoubtedly, all the subsystems and forces in the suprasystem are jointly responsible for the prevailing chaos and require the implementation of multi-strategy approach for coming out of it. But the major responsibility lies on the teacher who occupies the central position in the system. He is the pivot who determines the direction and pace of the system. If he assumes strength and realizes his accountability all influences can be conveniently moulded to system's advantage. The beginning has to be made by the teacher. All other initiatives except his active involvement will not reap any results.

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Institutional Planning at College Level

Meenakshi*

It will be unwise, if not foolish, to talk about the need and importance of planning, but it will be in the fitness of things to realise the absence of thoughtful planning in most educational institutions and the harm this absence has done to the education of the youth who have assumed added importance along with 5 crore young men and women of 18+ by earning the voting right.

A college is like a living organism always in the process of growing and developing in a well conceived direction and culminating into an integrated personality of its own. It would be worthwhile to ask as to what should be the form and substance of this personality of the college? Asking a little crudely - what is a college? What is done in it, by whom and for what? What is its produce, is it acceptable to the consumer?

Have we ever asked such questions? Have we ever given answers to such questions? If so, is the inquiry rewarding and has it motivated some action. The process of raising such questions at the college level and depending upon the answers initiating changes and modifications in the roles of actors and activities of a drama called college is what is precisely known as Institutional Planning or College Planning.

Every college, like human beings, has many things in common with other colleges, but it has, or should have some peculiarities which lend it an individuality of its own, which earn for it special recognition and which distinguishes it from others.

In other words, besides being an integrated personality in itself, it has something more, something special to offer to its students. For example College A has specialised in a peculiar type of Oxonian or Cambridge accent, College B is known for inculcating sense of discipline and responsibility, College C has the honour of contributing first rate personnel to the army, to IAS/IPS cadres, college D has produced scientists, College E has excelled in aesthetics, fine art, folk art or games and sports, College F has produced great debators, parliamentarian, poets, novelists, or excellent teachers, explorers or adventurers. This can be called an individuality of the college. We have, however, to remember that such a special lustre, such a peculiar glitter is an additional virtue; usual or common elements notwithstanding.

How does such an individuality develop? How is it that one college at Berkley (California) has seven Nobel Laureates on its staff? How is it that Calcutta college produced stalwarts like Jagdish Chander, Subhash Chander, Rash Bihari, Dutt and other Fire Brands? How is it that Eton has produced almost all the C-in-C's of Britain, and again, how is it that Trinity college, Cambridge has excelled others in providing a large number of Prime Ministers to the world? It is not by chance that such a glorious personality of a college develops. Traditions require concerted efforts to build them, concerted efforts to maintain them. Such efforts consciously made, constitute what we call planning at the institution level.

It can be argued that no college enjoys absolute independence or freedom, it is a limb of the university, a part of the Education.

Directorate, an agency of the government and a repository of the society and as such it has strings pulling it sometimes in different directions with different forces and consequently it has not much scope to decide and plan for itself. In its own enthusiasm or undercompulsions to satisfy its masters amicably, like the story of father of two daughters, one married to a potter and the other to a gardener, it can neither pray for rain nor for a bright sunshine. It leaves things to the hands of destiny and thinking that all is well with the world, it locks itself into slumber no matter whether the sleep is refused to prosperity or destruction.

Agreed, a college is subordinated to many masters. Its academic standards are laid down by the university; syllabi and courses are dictated by the university, examinations are conducted by the university, academic supervision and guidance are provided by the university, even teaching norms are suggested by the university. And teachers, buildings, finance and infrastructure come from the government. The society which serves as consumers of the college produce, which need elightened and trained intelligence to modernise itself and to safeguard its culture, its values and raise the quality of man, quality of life, has neither a share nor a say in the syllabus or courses or even the administration and management. There is no coordination among the university, the government, the state education department, the college administration, the financiers and the society in general. In this situation, what can a college attempt at its own level?

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There is substance in this question. But three questions arise on their own. One, who is to bring about this coordination? Second , are the university, the government, the society and the college not the suiters of a common goal? Is not their aim identical? Is there any conflict in their objectives? What are the irritants, if any, which make them antagonists rather than protagonists? Third, keeping the situation as it is, can the college do something in a planned manner to do better and run faster towards its goals without any outside help, support or patronage and any offence to any of the masters referred to above? Can a college initiate any self-reformation?

Every college has the same masters and all colleges have been almost identically situated, all have problems and difficulties. But despite such adversities and hardships some colleges have chosen not to respect the routine, not to walk on the same road and not to go in the old direction. They have decided to go alone and explore new horizons, tread virgin fields, initiate novel programmes and make adventures. They have fought out the difficulties, they have surmounted the problems, resisted the pressures, shaken off the inertia, countered the opposition and very nearly completed their pursuits successfully. They have developed an individuality of their own, a personality of their own.

A college is a unique institution of highly educated and cultured members of the staff who are in every respect superior to an average member of society, have greater knowledge, higher intelligence knowledge, higher intelligence, saner objectives, and are more respectable and reflective than any citizen of the nation. In its students the college has rising and growing energy, ambition, potentiality and promise. No other institution in the country can hope to have at one place such an accumulated amount of intellect on the one hand and a flooded river of energy and ambition on the other. A college has great potential. With a little thoughtful planning of and coordination between intelligence and power; ambition and action, knowledge and its use joined end to end, a college can succeed in any aim that it chalks out for itself.

But looking at a college even 40-50 years after its foundation, in some cases even after a century of its establishment, one cannot but help feel that it has failed to adapt itself sufficiently to the vast and unique opportunity which came its way or which surrounds it even today. It seems to have lost enthusiasm and initiative out of its own lethargy or on account of its depressing problems or in the vain hope of getting leadership and guidance from above or from an outside agency. In the words of Edward Shils there is, in an Indian college, no intellectual community, no movement. Can there be any sader or more pungent a comment than this? Every college has to ensure that every student who passes out takes with him some understanding of the country's cultural heritage, its past achievements and triumphs in the field of art, philosophy, science and so on. He should know what he is heir to and before he leaves the college he should be a formed gentleman, an informed gentleman and an efficient gentleman knowing what to do and how to do. He has not to leave the college as a bewildered, confused and aimless youngman. And this will happen not of its own. An effort has to be made for the achievement of such purpose. How is it that a nation of 80 crores has failed to capture any honour at Olympics, at Nobel selections or at any international assessments.

Our colleges suffer from an excessive emphasis of uniformity and rigidity of rules and regulations received from the university and the government. The idea of creating uniformity and regulating the educational process through comprehensive codes has been overdone and has killed the freedom and initiative and reduced experimentation to the minimum. College working would be characterised by elasticity and dynamism, by exploration and experimentation. Dr. J.W. Garderner has rightly remarked: "The rule book grows bigger as ideas grow fewer". Thus every well established organisation is a coral reef of procedures that were laid down to achieve some long forgotten objectives. A college must, therefore, resort to some means of combatting the process by which men have become prisoners of their own procedures. One such method is available in experimentation and one master experiment in college education is Institutional Planning .

Institutional Planning has two main ends in view. One lies in the field of enlisting problems and difficulties and developing strategies to solve them through short and long range methods. This can be called the non-academic aspect of institutional planning. It is important and it must be given the thought and attention it deserves. A college does need an adequate number of well-furnished classrooms, well equipped libraries and laboratories, up-to-date collection of teaching aids — both projective and non-projective, duplicating and photostat facilities etc. etc. It must have an art gallery, a refreshing garden, attractive lawns, shady trees, playgrounds and stadia etc., which could ennoble the spirit and harmonise the body. To say the least, physical amenities in a college should not be wanting. Luckily the UGC and the State Governments and also the community in general are largely willing to provide financial assistance in this field. If a college lacks any such physical facilities, the blame has to be owned by the college in full.

But the provision of physical amenities is not the be all and end all of institutional planning. It is indeed unfortunate that most colleges do not go beyond it, and most principals feel contented with their efforts made in this direction only. They rejoice over purchasing furniture, computers, library books or raising buildings. Surely this is a satisfaction of a lower type of a clerical or executive type not requiring any deep thinking or real creative effort. An educationist should not draw satisfaction from such lower level efforts, he is cut for and is capable of doing nobler and higher things. The more important side of institutional planning than providing material things is its academic and philosophic aspect, its educational and value-oriented aspect. It deals with how teachers teach, how students learn, how teachers should teach, and how students should learn. Are we teaching the students how to learn themselves? Have we created a reading habit in the students? Should we do it? Have the teachers and students ever met to decide about the mode and method of teaching and learning or the procedure of evaluation? Cannot the lecture method, outmoded and useless as it is, be replaced with some modern and efficacious techniques? Can we try seminars, tutorials, projects and group discussion methods at least for a few topics if not for the whole course of study? Have we ever asked or discussed or even felt concerned as to what our boys and girls should grow into and how? Have we ever given lesson in manners, in speech, in living, in etiquettes, in culture? Have we tried to socialize the individuals, raise their personalities, identify and develop their talents, remove their eccentricities, round off their corners and polish their dialogue? Have we ever taught them how to identify and present their problems, how to discuss things, how to work for the college or for their friends and the society in general? Virtues such as compassion, tolerance, sympathy, fellow feelings, endurance, cooperation, give and take, truthfulness, sense of duty and responsibility, discovery of self, awareness of personal inadequacies and strengths, eagerness to learn etc., are not learnt in classroom lectures. We have to do something more than arranging classroom lectures if we wish to inculcate such virtues and if we wish to achieve the aims for which college education stands.

Have we consciously tried some such things? Making an effort in this direction is a part of institutional planning.

Of course we have to bite as much as we can chew. We need not be over ambitious. Our approach has to be selective and planned. It has to be a cooperative venture involving the entire college community or at least as many as are willingly coming forward. No hard and fast procedure for institutional planning can be laid down. Individual colleges will go their own way depending upon local considerations and needs. But some broad suggestions can be offered.

Let us proceed democratically. At a meeting of the members of the staff and representatives of the students, a planning board may be constituted. This board should be fairly broad based, reflecting all interests and shades of opinion, the activists and the radicals not at all excluded. This board may be charged constitutionally to invite academic and non-academic problems from different quarters. Some seminars or group discussions to identify problems and determine priorities, and also inviting suggestions and the process of tackling such problems. The Planning Board will then study the sources and capacities of the college and outside agencies to find out what can be done to solve the non-academic problems. Several sub-committees can be made to pursue projects and programmes in the field of non-academic problems. Experience has shown that students committees usually achieve success in their projects, they have energy and the force of number behind their activities

Similarly, some thoughtfully constituted committees can be given the responsibility of suggesting priority areas in the field of academic and philosophic projects such as teaching methods, study habits, democratic values, identification of students' talents, improving aesthetics and so on. Some college may gainfully make effort to teach students how to talk softly, in a low tone and in civilized language; some may take up crusade against narcotics, some in community service, some college may encourage the students to learn how to express themselves through speech or by writing verses. And some colleges may specialise in programmes of adult literacy, some in games, some in art and painting, some in developing museums and art galleries.

In brief, colleges must work in positive direction according to some plans which should have an inbuilt machinery of monitoring and periodical evaluation. Planning may be on a year to year basis or it may be a long range planning covering a longer period, depending upon the nature and number of items being planned. We have to remember that the purpose of college education is not just to prepare the students or examinations or for annual sports meats. We have to develop their individualities and produce useful citizens in them.

Some definite advantages will accrue from institutional planning. College problems will be solved no doubt, but more gainful advantage would be that college life for student will become meaningful and purposeful and the inherent virtue of "doing something", "becoming something" in every man and woman will have a chance to operate and develop.

Restructuring of Courses for Development Linkage
A Case Study of Goa

Manju Narula*

In 1980s the two issues that became very crucial in the areas of higher education were building the knowledge base and relating this knowledge base to developmental thrust of the country. The response of higher education to deal with these two issues also became crucial not only from the point of view of development of higher education but also for the very survival of the country. In response to these issues National Policy on Education was formulated in 1986. Even prior to that, the UGCs scheme of restructuring of undergraduate courses attempted to involve higher education with the development process on much more broader scale. This scheme was further revised in 1981.

THE SCHEME

The UGC scheme of restructuring of courses was initiated during the Fifth Plan Period. The conference of Vice-Chancellors held in May, 1981 reviewed the position regarding restructuring of courses at the undergraduate level for greater relevance and development, and the guidelines for the restructuring of courses in the context of New Pattern of Education. In 1983 the Commission with the help of a Committee reviewed the guidelines for restructuring of courses at undergraduate level and issued revised guidelines. Upto now nearly 30 out of 80 affiliating universities have attempted restructuring of courses and it has been implemented by 159 out of 5,400 colleges.

OBJECTIVES

The objective of the scheme is to restructure courses in such a manner that a student can apply his/her theoretical knowledge to the problems of the region through field work, project work, extension etc. In other words, the existing conventional courses may be integrated with concrete problems relating to the development of the region.

In this study an attempt is made to examine the possibilities of restructuring of courses by taking a specific case study of Goa State.

The paper attempts to examine:

a) schools education and higher education structure of Goa;

b) economic developmental plans of Goa; and

c) higher education and development plan relationship.

On the basis of the above objectives and keeping in view the national development thrusts as well as policy thrusts in higher education some suggestions are also offered for diversification and restructuring of higher education in Goa.

BACKGROUND ANALYSIS

Goa — Land, People and Economy

Geography: Goa was one of the districts of Goa, Daman and Diu upto 1987; now it has become a state. The total area of the district is 370 km. and the total population according to 1981 census is 10.87 lakhs. The physiographic characteristics are rich and varied consisting of hills, forests, coconut groves, and rich fields. Industrial and tourism development have been identified as important sectors for the economic growth of Goa.

EDUCATION

School Education System

The education system carries children through I-VI standard of primary education, V-X standard of secondary education and XI-XII for higher secondary education. This is followed by 3 years degree level education and 2 years postgraduate education. The following table will present the profile of education system in Goa in 1985-86.

Table 1

Level	*School*	*Enrolment*
Primary	1272	138815
Middle	421	75059
Secondary	271	51501
Higher Secondary	21	83381

Upto middle level there is substantial number of dropout, half way. Of these, who drop out, a few receive training in various schemes, some in the ITI's, others fit

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Educational Administration Unit, National Institute of Educational Planning and Administration (NIEPA), New Delhi themselves, as best as they can into life. Many of those who get through the 10th standard increasingly travel onwards through the 12th standard and often enter into colleges.

To enable education system to meet the requirements of the society, there is need for some changes in the syllabi according to local needs. To meet the requirements of the development of Goa's economy, the structure of education, should be like the following: standard I to VII as basic general purpose education, standard VIII to X as training for basic skills and self employment, standard XI to XII as training in advanced skills for small entrepreneurship and for supervisoty level, college degree level as training for super skills and managerial levels.

The vocationalisation course should be introduced at VIII to X standard and XI to XII standard. The vocational education helps to satisfy manpower needs, whereas general or academic education does not. The National Policy on Education 1986 has also laid emphasis on vocationalised courses. The information of systematic, well planned and vigorously implemented programmes of vocational education is crucial in the proposed education reorganisation.

These elements are meant to enhance individual employability to reduce the mismatch between demand and supply of skilled manpower and to provide an alternative for those pursuing education without particular interest. These courses will ordinarily be provided after the secondary stage, but by keeping the scheme flexible they may also be made available after class VIII.

Once vocational courses are available, many of those who go for higher education would prefer to opt for these courses. Vocationalization will only succeed if both educational and school authorities are knowledgeable, and enthusiastic in effecting this change. When students finish their school they will have a choice, whether they want to go for job or further studies.

Higher Education System

The higher education consists of general education, professional education and vocational education. General education consists of Arts, Science and Commerce courses and professional education consists of Medical, Engineering, Law and Teacher Training. The vocational/skill oriented education consists of polytechnics, ITIs, ship-building and Fine Arts. 57% students are in general education, 12% are in professional and 31% are in vocational education. General education does not satisfy manpower needs, even then half of the students go for general education. The professional and vocational education has just half of the students in comparison with general education (Table 2).

Thus those who are in higher education account for more than half of the total students population. Nearly one third receive vocational and skill oriented education and the remaining professional education. The question therefore arises whether half of the students population who are receiving general higher education would best fit economic and social situation which often require varied capabilities. This question also assumes importance owing to the fact that "How future of students in Higher Education would have kind of vocational/skill base". Before any suggestions are offered for redesigning of courses, it may be pertinant to discuss the course structure and the plan developmental thrust in Goa's economy and the need for restructuring of courses in higher education.

Table 2

Distribution of Enrolment in General, Professional and Vocational Education in Goa, 1985-86

	Enrolment	*Percentage*
GENERAL EDUCATION		
Arts Science	7246	29.39
Arts Commerce	1657	6.72
Commerce	521	21.22
Total	14134	57.33
PROFESSIONAL EDUCATION		
P.E.	415	1.68
Law	634	2.51
Teacher Training	207	0.84
Medical	428	1.74
Dental	105	0.43
Pharmacy	159	0.64
Nursing	200	0.81
D.Ed.	736	2.99
Total	2884	11.70
VOCATIONAL EDUCATION		
Ship Building	118	0.48
Polytechnics	3399	12.79
ITIs	2786	11.30
Fine Art	1259	5.11
Food & Craft	74	0.30
Total	7636	30.97
Grand Total	24654	100.00

The course structures of higher education in Goa are given in Table 3.

Table 3

Distribution of Course Structure of Professional and Vocational Education in Goa, 1985-86

PROFESSIONAL EDUCATION

1. **Medical** (1) Enrolment 492 (Medical, Dental and Pharmacy) Course Structure - M.D. M.S. M.B.B.S. Ph.D. Misc. (Research) in Biochemistry and Philosophy, Diploma Courses in Anaesthesiology, Psychological and Social Medicine, Fronsic Medicine and Skin and V.D., Bachelor of Dental Surgery M. Pharm, B. Pharm, Ph.D. (Research) Diploma in Lab. Technology, D. Pharmacy.

2. **Engeering** (1) Enrolment 415

   Course Structure - B.E. (Civil Electrical, Mechanical, Electronics, and Telecommunication) Degree Courses of Bachelor of Architecture.

3. *Semi-Professional Courses*

   Polytechnic (1) Enrolment 399 Diploma course in civil Engg., Mech. Engg., Elect. Engg., Industrial Electronics Engg., Post Harvest Food Technology, Stenography & Private Secretarial practice, and mining and mine survey, technical subject of SSC and Wireman apprentice course.

4. **Skill Foundation**

   ITI (93) 2786 Fitters, Turners, Welders, Mechanics (motor vehicle Mechanics (diesel), Electrician, Stenography (English), Plumbers & Electronics Mechanics (Radio & TV) Hand composing and Proof reading, Cutting and Tailoring, Mechanic (Tractor), Wireman, Building Construction.

5. **Ship Building** (1) Enrolment 118

   Diploma in Shipbuilding Engineering

6. **Education** (5) Enrolment 943

   Diploma in educational personal asstt. course, trained teachers certificate course.

7. **Fine Arts (7) 1259**

   Degree in fine arts, solo singing, piano, violin and cellor, wind instruments musiciology and musicianship, choral singing, sangeet vishard in mushc and dance and intermediate, degree grade in Art, Accordion, Organ, Guitar, and Solfeggio, Dr. of Music.

The thrust areas of the VII Five Year Plan are as follows: Agriculture and allied services, rural development, cooperation, irrigation, power, industry and minerals, transport, scientific services, general services. Keeping in view the background analysis and the present structure of education, some thrust areas are discussed here for diversification and restructuring of higher education for the development of the State.

PLANNING OF COURSES FOR DEVELOPMENT OF THE STATE

Agriculture

Agriculture is an important occupation of the population. The physiographic characteristics are rich and varied. The soil is also very lateritic. Though agriculture is an important occupation of the population it has never become a full time profession because of limited irrigation facility which at present is about 10% of the net cultivated area. Rice and Wheat are the major items of food consumed by the population of Goa. But Goa produced mainly rice and the wheat quota is totally imported from other States and the rice production is not sufficient for Goa's existing population. So Goa has to import rice also. The main problem in the development of agriculture is lack of irrigation facilities in the territory which is one of the main reasons for the unsatisfactory state of agriculture in its overall economy. Another problem in the agriculture development of Goa is the small size of operational holdings.

To achieve self-sufficiency in foodgrains, it will be necessary for the government to suggest some ways and means to attract educated people towards this sector.

Following are some of the thrust areas of the VIIth Five Year Plan

- Crop husbandary
- Manures & Fertilizers
- Plant Protection
- Extension and Farmer Training
- Land development & water utilization on cultivable land

Keeping in view the background analysis, the thrust of the plan and the present structure of higher education the problem that arises is how to enable educated persons contribute to this sector. One way of exploring the possibility will be the introduction of certain applied courses.

The following courses of applied nature in science and social sciences may thus be suggested:

- Agricultural Production & Crop Husbandary
- Soil and Water Conservation
- Animal Husbandary
- Dairy Development
- Storage and Warehousing
- Multicropping and Increasing Productivily in Small Size of Holdings
- Agricultural Marketing
- Agriculture/Pharmacy
- Seed Pathology, Fertilizers
- Farm Management

Industry

Industry is very important activity in Goa's economy. Goa's preliberation economy was basically an import-oriented economy which started yielding place to post-liberation production oriented economy. The contribution of industrial sector to the territory's required income has gone up from 4.8% in 1967-68 to 27.7% in 1980-81[2]. Further in the 71-81 decade 2400 new jobs were created by industry. The number is likely to accelerate in the future, predominantly in the small scale sector. A large area of opportunity exists in the high consumption of consumer goods which today come mostly from outside the territory.

At present there are 13 Industrial Training Institutes having 11% enrolement. But these ITIs do not satisfy the needs of all students. Following table shows that there is still demand for more vocational and skill oriented education.

Table 4

Demand for Schools in ITIs

	Applications		Ratio of receipt to Admn.
	Received	Admitted	
Fitter	203	103	1.97
Turner	49	24	2.04
Mechinist	15	13	1.15
Welder	224	149	1.50
Plumber	93	56	1.66
Mech. Diesel	916	433	2.09
Mech. Tractor	14	24	0.56
Mech. Motor Vehicle	337	83	4.06
Electrician	536	219	2.45
Instrument Mech.	9	17	0.53
Mech. Radio & TV	193	61	3.16
Electronics	301	60	5.02
Mech. Ref. & AC	43	36	1.19
D'Man (Mech)	43	36	1.19
Hand Comp & Prof Reading	11	13	0.85
Stenography	241	103	2.34
Tailoring & Cutting	219	136	1.61
Building Const.	13	13	1.00
D'Man (Civil)	231	44	5.25
Wireman	63	14	4.50
Total	3761	1641	2.29

Source : The study on Vocationalisation Diversification & Expansion of Goa.

In Goa, situation is very peculior. Here educated unemployment is very much. "On analysing the labour structure in the territory one is constrained to find an increasing percentage of outside labour engaged in industries.... unemployment in Goa is restricted to educated class and menial labour is not available locally at the desired line". So there should be such industrial strategy which would give employment to educated unemployed. The thrusts of the VII Five Year Plan on this sector are as follows :

- Village and small industries
- Medium and large industries

Keeping this in view some small and large scale industries should be established. The future strategy of industrial development should aim at dispersal of units throughout the territory and specially in the interior talukas which have not yet been the recipients of the benefits of industrialisation. For a satisfactory industrial growth highly skilled and technically educated manpower is needed.

From the above analysis and keeping in view the national development thrust, the introduction of following applied courses in science and social science may be suggested :

- Business Management
- Export Management
- Computer Programming
- Labour and Social Welfare
- Book Keeping and Accounting
- Marketing
- Trade Unions
- Rural Industrialisation
- Waste Products Utilisation.

Fisheries

Fishing is an important activity among the people living along the coastal area. Goa has more than 100 km. length of coastal area, 250 km. inland waterway comprising seven rivers. Having such facility the main aim of this sector should be to increase the fish production, creation of suitable employment opportunities, rational utilisation of natural resources of earning foreign exchange through export of prawns, fish and other marine products. But it is not so. Fish prices have shown an increasing trend year after year and the availability of fish has not kept pace with the demand.

The Table 5 depicts year-wise marine fish catch in Goa in terms of quantity and value and composition of catch.

Table 5

Distribution of year-wise catch in Goa in terms of Quantity and Value

Year	*Quantity* (in Tons)	*Value* (in Lacs)
1966	24600	98
1968	12460	60
1968	18888	98
1969	27559	117
1970	20736	290
1971	39980	534
1972	30293	340
1973	15740	201
1974	18056	359
1975	34655	338
1976	33648	519
1977	32653	676
1978	26463	391
1979	26596	563
1980	22427	602

Source : Goa : An Economic Review by P.S. Angle

So some remedial measures should be immediately adopted. In the course structure and subject on fisheries, the following may be suggested:

- Fisheries
- Coastal Economy
- Ground Water Ecology
- Water Technology
- Storage/Warehousing

Toursim

Goa presents unique features of affection and attraction to aspiring tourists all over the world. It has become world's largest industry. The welcome which is accorded to a tourist at the place he visits is closely linked with the tourist expenditure, which contributes to the prosperity of the people of the region's hotels, restaurants, transport operators, travel agents, handicrafts, shop owners.

To meet specifically the need of this sector some courses should be included in the curriculum like :

- Hotel Management
- Catering Supervisor
- Cooking
- Banking, Travel Tourism, Home Management, etc.

Mining

Mining is very important activity in the economic development of Goa. It gives employment to vast sections of population and also earns valuable foreign exchange to the country.

Goa's mining industry today directly employs about 25,000 persons which is almost equal to the number of government employees in the territory. An equal number of persons is estimated to have been employed in transport and other allied activities relating to mining industry. This would mean that a little less than one fifth of the total manpower employed in the territory is sustained by the mining industry.

So the courses should be redesigned in such a way that they are linked with economic components of development. And "it should meet the demand in shaping the future of Goa's Mining Industry". But if we see the course structure, there is only one polytechnic college, having mining and mine survey subject. So more stress should be given on mining in the curriculum.

CONCLUSION

Today to meet the requirements of developing economy varied types of capabilities, skills and knowledge are needed. These could be built up or developed by strengthening the scheme of redesigning the undergraduate courses and adopting new methods of teaching. Only then would higher education be relevant to the needs of developing economy. On the basis of the above analysis, following general conclusions emerge. In Goa, the opportunities of further growth are immense. However, future growth policies have to be well-designed. The future economic development of Goa can be linked with conservation of its natural resources and their planned utilisation.

This can be successful, if there is relationship between higher education and development plan. The curriculum should be planned according to thrust areas of the developmental plan. It means that the existing conventional courses may be integrated with concrete problems relating to the development of the region. This programme of restructuring is really a challenging one and may lead to the right type of educational system for which all of us are aspiring.

In the process of restructuring of courses representatives of the employees should also be consulted and involved.

Thus, through restructuring closer links between academics and the community would be established. Hence the institutions/colleges would undertake teaching and research in those courses which are relevant to the community's needs and would use community expertise.

The implementation of restructuring of courses can be successful, if financial support by UGC as well as from the State Government would be given in time. Upto now, this scheme has been successful only, due to leadership of the principal, support of the management, financial resources and general atmosphere in the college.

Last but not the least, this scheme can only be successful if the teachers are sufficiently oriented to vocationalise courses outside the conventional subject courses. But the existing set up does not give them sufficient incentive and opportunities to utilise their talent.

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5. B.Sc. (SPEECH & HEARING: (3 years course)

ELIGIBILITY: (1) Age 17 plus (2) Pass in Intermediate/PUC(10+2) examination or any other equivalent exam approved by Mangalore university with atleast 45% marks in aggregate in Science subject.

Candidates who are appearing for the qualifying examination for the Academic year 1991-92 are also eligible to apply provisionally subject to the condition that they should produce the proof of passing the qualifying examination with minimum marks required at the time of admission/interview and also Eligibility Certificate obtained from Mangalore University.

Application forms and prospectus can be obtained from the Secretary, Dr. M. V. SHETTY MEMORIAL TRUST, A.B. Shetty Circle, Mangalore-575 001 by sending a D.D. for Rs.60/- drawn in favour of Dr. M.V. SHETTY MEMORIAL TRUST payable at Mangalore.

LAST DATE FOR RECEIPT OF COMPLETED APPLICATION FORM IS 4.7.1992.

The Principal, Institute of Nursing Sciences,
A. B. Shetty Circle Mangalore-575 001 (Karnataka)
SPONSORED BY: DR. M.V.SHETTY MEMORIAL TRUST (Regd)
MANGALORE - 575001

Results of B.Sc. (Nursing) for the last 4 years are as follows:

I year	100%	1st Batch Final Year	95%
II year	100%	IInd Batch	100%

Role and Function of Education

Noted Industrialist, Dr. N Mahalingam delivered the Convocation Address at the third convocation of Sri Avinashilingam Institute of Home Science and Higher Education for Women, Coimbatore. In his address, Dr. Mahalingam raised several pertinent questions on the role and function of education. He said, "Can education develop entrepreneurship in students? Can education help the students become self-reliant? Can the teachers help the students become self-employed citizens? Can the teachers inspire the students and train them to become job creators?" He, however, hastened to add, "Unless the teachers realise that these are the crucial questions and we find answers to them, there will be no real reform in education". Excerpts......

A serious problem is that our Graduates, after competing university education, become "job seekers". Thousands of graduates coming out of the universities in our country are frustrated because they do not immediately find jobs after they leave their alma-mater. They remain unemployed, sometimes for several years. The pity of the matter is that they are not only unemployed, but are also unemployable.

A graduate should become a job maker, not a job seeker. How could one become a job maker? It is not easy to make jobs. It is not easy to become self-employed. Actually it is the challenge before us. If the graduate is to create work for herself and for others, then, she must be enterprising and resourceful. Entrepreneurship and resourcefulness should be cultivated at the university level itself.

Can education develop entrepreneurship in students? Can education help the students become self-reliant? Can the teachers help the students become self-employed citizens? Can the teachers inspire the students and train them to become job creators? Unless the teachers realise that these are the crucial questions and we find answers to them, there will be no real reform in education.

Mahatma Gandhiji, who evolved the Wardha pattern of education, wanted the students to start earning money during the high school level itself so that they are able to pay the salary of the teachers by the time they complete the school education. In regard to Collegiate education, the guidance of Bapuji was that the student should earn for the teachers their salary by work and government should give only capital grant for building and laboratory. His other thoughts particularly on women's education deserve special mention. In his eyes, the greater ability of women should efficiently availed of for the benefit of the nation.

He stated :

> "I wish to see women as men's equals and even their superiors. I would like you to occupy all posts of responsibility. But that does not mean that I would like you to occupy them without possessing the capacity. In fact, I want you to give proof of greater ability than men and that is possible only through education for all of you".

Nehru was even more emphatic on the need for women's education, when he said :

> "Our women must have the maximum benefit of education as they are the symbols of India's culture"... "If we deny education to women, we are denying culture to the nation."

Regarding technical and professional fields it is easier for the graduates to obtain jobs or become entrepreneurs. Even in these fields sometimes we have unemployed graduates. On the whole, technical and agricultural education have been successful in our country. They have made substantial contributions towards a breakthrough in agricultural production and technological development.

However, self-employment or entrepreneurship is normally a difficult proposition. They do not get jobs soon after graduation as they used to. So they must take to self-employment. Agriculture is surely a suitable field for self-employment, but the graduates should have land and the necessary resources for other inputs. How could graduates be helped to become successful self-employed agriculturists and similar questions should be taken up in higher education.

Yours is a women's University, specialising in Home Science. So this University should help the students produce useful things and household articles which are needed in the homes. There is a large number of food and allied items needed in homes. Food processing is an important area which gives gainful employment and I would suggest that such items be produced by students and put into the market. The restaurants, hotels and thousands of homes will buy their products. This would enable the University to generate its own income and also help the students to earn for themselves.

Tamilnadu kitchen has a box called "Anjarai Petti" which contains various additives like pepper, cumin-seed, mustard, turmeric etc. The food we eat should have six different tastes which are good for health. For the Tamilian, food is medicine and medicine is food and a lot of diseases are easily avoided.

Mahatma Gandhi stressed the importance of full employment. This is a national objective which we should strive to achieve. If poverty is to be removed completely from our country, every adult should be given an opportunity to work. He should also be given the tools to work with. Gandhiji was for proper employment to the citizens so that they can be self-reliant; he was not in favour of doles to the poor. He did not like a system which allowed a section of people to be in a position of want and he wanted the society to be such that it provided work for all people capable of work.

Mahatma Gandhi said, "Not mass production but production by the masses". The philosophy of Khadi and Village Industries and Small Industries is based upon this approach. It is unfortunate that the trends in economic growth have been such that we have increasing unemployment in the country.

Actually the employment growth rate has been declining in recent years. In 1972 to 1977, it was 2.82%. In 1977-78 to 1983, it declined to 2.22%. It further declined to 1.5% during the period 1983-88. The 8th Plan has been envisaging 3% employment growth rate. Unless this target is achieved, it will not be possible to attain the goal of full employment.

Women graduates, particularly, need a knowledge of child development and child psychology. They should also have some knowledge of child medicine. There is much in our tradition which is valuable. For instance, when children get physical disorders, traditionally only light and soft medicine is administered. Often this is learnt through experience and handed over from generation to generation.

The mother passess on the knowledge, born of experience to the daughter who, in turn, pass the same ou to her daughter. Now-a-days we see that very strong medicine including antibiotics is administered to babies and small children. Such strong medicine leads to serious consequences. These matters have to be carefully considered and the curriculum of a University such as this should include traditional wisdom.

Teaching, Nursing are natural advocations of women. In addition dress design and manufacture as also toy design and manufacture can be an area which can provide employment to educated girls.

In Tamilnadu, we have a great tradition of Siddha medicine. This indigenous system is time-tested and has valuable features. Often medicine is made part of the food we eat. Even as a person eats his regular meals, he also takes in a few medicinal items which neutralise disorders that the body is prone to.

Siddha medicine is derived from herbs and greens found in nature. Man is a part of nature and indeed a unique product of nature. Medicine based on natural material has a salutary impact upon the physical system. Research on medicinal herbs should be undertaken in a scientific way. The Universities can undertake this work. How was the elderly lady of yester-years capable of attending to any normal upset of the stomach or normal fever, or for that matter, any type of minor illness?

Speaking of Siddha System of Medicine, I am reminded of Vallalar.

St. Ramalingam has given a lot of information on plants and their use as medicine. He is a great Siddha. His advice to the people is that we should feed the poor and banish the hunger from the world. Banishing hunger can be mainly done by ladies only by their hospitality.

Women, particularly educated women, should be the custodians of our traditions and culture. Modernisation sometimes may erode our ancient cultural values. Not everything in the past tradition is good and needs to be preserved. There is bound to be change. However, there are certain time-tested values which are the foundation of our civilization. When the whole world is in a flux, it is essential that fundamental values are kept intact.

In this context, mention may be made of great ladies of the past beginning from Karaikkal Ammaiyar who lived during the 5th-6th Century A.D., persons like Vijayalakshmi Pundit, the roving ambassador of India, and Sarojini Naidu, the Nightingale of India, who lived during our own times.

I would like to refer to the special contribution of the divine lady of the South. Karaikkal Ammaiyar was a beautiful young girl who was the only child of a very rich merchant in Karaikkal. She was, later, reverently called "Oh Mother" by Lord Civan himself. Sekkizhar describes her as the

> "Lady of silken tresses,
>
> who settled down to a wifely life
>
> as excellent mate to him,

her husband,

even while welling ardent love unto the sacred feet

of the Lord with the rampant bull

vastly increased unceasingly (in her heart)

performed the traditionally handed-down household duties without failing in the noble quality of a wife"

She sang a number of Prabandams and Andadis in praise of the Lord. She was followed by Nayanmars and Alwars who sang Thevaram and Prabandham.

The life and salvation of Karaikkal Ammaiyar is an example of one attaining wisdom through devotion even without any academic education or schooling. Karaikkal Ammaiyar possessed wisdom which is more permanent than knowledge. Wisdom includes knowledge. The latter may lead to wisdom but the former is God-given. Our Universities should not be mere storehouses of knowledge but should also be tools of wisdom.

Prabandham and Devaram constitute the base of our musical system and hence our children should learn to sing these songs in groups. All the people, who attend church, are able to join in choir singing. So also we should be able to take part in singing, as was done in earlier years especially in our temples when we go for worship. In Mauritius where the Tamil people have lost the ability to speak Tamil it is a great surprise to see that they, as a group, sing our devotional songs like Thevaram, Thiruppugal very elegantly having prepared using notation in French letters. From Sanga poetry, Silappadhikaram, we have tradition of music and dance and the University can also help the young ladies to learn music and dance which will make them good teachers of music and dance.

Women, as mothers, are the primary builders of the nation. The mother is the first teacher of the child. She is responsible for the physical, mental and moral growth of the child. She should try to cultivate a non-violent culture in the child. If this is done, a non-violent nation will emerge. "The Woman is the incarnation of Ahiṁsa", said Gandhiji.

Universities such as this and its graduates should be the ambassadors of Indian culture. At the same time, they should also be agents of wholesome social change. This is a delicate balance; but it can be done. Ancient wisdom should be combined with modern scientific knowledge. The two together will bring prosperity and happiness to our people. I hope and pray that graduates of this University will be pioneers in this regard.

The future trends are becoming clear. Futurological studies indicate that the decade of 1990's will see the rise of women in every department of life. The decade of the 90s is expected to be the decade of women in leadership. In business and other fields, women were a minority of about 10% in 1970 in the United States. But now the percentage has risen to almost 50. In the new Information Age, a typical worker will be a female.

It is predicted that women will lead in almost every field in the 21st Century. Women will continue to lead in the field of teaching and nursing but they will acquit themselves in other fields also; in politics, in business and so on. We see this already happening around the world. It means that opportunities will open up for women graduates in a big way in the future. It is for them to grasp graduates in a big way in the future. It is for them to grasp the same and make creative contributions to the development of a new world civilization based on devotion and discipline.

Status of Women
Extracts from Chancellor's Address

by

Shri C. Subramaniam

Governor of Maharashtra

It is rightly said that the status and position women enjoy in any society is a true index of its cultural and economic progress. This in turn has some relation to the education women receive. In early times, education of women was greatly encouraged. We worshiped and still worship Saraswati as the Goddess of learning. In the Vedic age women enjoyed equal opportunities for education and work. Indian tradition has always respected womanhood. However during certain periods of our history due to the impact of successive foreign invasions education of women suffered a serious setback. Education for them soon became an exception rather than the rule and their place and their role in society became more and more restricted. Even during the British period, when education was modernised and many notable institutions established to promote education, the focus of activity always remained the men. Many of our social and religious practices have kept women illiterate, backward and timid. Women had to be content with an interior status in the man-dominated past. This was ensured by man-made customs and laws in the shaping of which women had no hand. Legislation has mostly been the handiwork and prerogative of men and men have not always been fair and discriminate enough in performing that traditionally self-appointed role. The latter half of 19th century witnessed a new political awakening among the Indian masses groaning under the shackles of an alien and oppressive rule. This new upsurge demanded greater participation of women in political and social activities. Maharshi Karve, a great national leader and social reformer, visualised that such participation could be meaningful and purposive only if women were given liberal education and encouraged to develop their individuality and personality.

All our modern national leaders from Raja Ram Mohan Roy to Gandhiji were upholders of women's education and women's freedom for self-development. Swami Vivekananda impressed on the nation the urgent need to educate our women and said that, as a bird cannot fly on one wing, our nation cannot progress with only our men getting education. Both our boys and girls need to be educated and both need to be given the blessings of both secular and spiritual education.

Mahatma Gandhi had perceived women as forerunners of the social transformation in nation-building. He appealed to women to abandon their traditional seclusion and participate actively in the freedom movement. When the Congress in 1930 adopted full independence as its goal, it also committed itself to equality for women. In the civil disobedience campaigns that followed, thousands of women, educated and illiterate, affluent and working class, put aside their domestic preoccupations to march in Congress demonstrations, face police batons and court imprisonment. In fact, Satyagraha offered an ideal weapon to the women of India who wielded it with incredible audacity and courage to fight not only the British Raj but also the social evils of child marriage, drinking, consumption of foreign goods and untouchability, which became an integral part of the Gandhian strategy for total revolution. In Gandhiji's own words : "Woman is the companion of man gifted with equal mental capacities. She has the right to participate in the minutest details of the activities of man, and she has the same right of freedom and liberty as he. She is entitled to a supreme place in her own sphere of activity as man is in his .... Man and woman are equal in status, but are not identical. They are a peerless pair being complementary to one another; each helps the other, so that without the one, the existence of the other cannot be conceived, and therefore it follows as a necessary corollary from these facts that anything that will impair the status of either of them will involve the equal ruin of both."

The State of World's Children 1992 Report, released by the UNICEF last week, while calling for a new world order that will vigorously as the apartheid of race, makes a poignant analysis.

"The one constant of the developing world .... is that women will be working from first light until dark to meet their families' many needs.

It is a commonplace that the developing world's women bear and care for its children, fetch and carry its fuel and water, cook its meals and shop for its needs, wash its clothes and clean its homes, and look after its old and its ill. It is less widely known that women also grow and market most of the developing world's food, earn an increasing proportion of its income, and work, on average, twice as many hours a day as men. In return for this disproportionate contribution, the women of the developing world are generally rewarded with less food, less healthcare, less education, less training, less leisure, less income, less rights and less protection."

So heavy is this weight of discrimination that it even sways the survival chances of the girl child. All other things being equal, girl children have better natural chance of surviving the early, vulnerable years. But all other things are not equal. In several countries of South Asia, fewer girls survive than boys. And in this gap between natural and actual survival rates, discrimination can be measured. Biologically the male is the weaker sex in the infancy and this ratio is equalised in most communities where the status of the females is good at puberty. Thereafter, despite the risk of higher differential mortality among women at ages of child birth - 15 to 45 - this ratio seldom goes below par in society where women's status is good. An equivalent risk for males at the ages 15-45 is the comparatively higher risk on account of occupational hazards and heavier physical labour. However, as soon as females clear the span of childbearing their proportion rapidly improves on those of males as a consequence of which the overall ratio of females to 1,000 males goes considerably above parity as in most countries. Not so in India where the ratio of females to male suffers not only because of high neglect of girl babies at infancy and childhood but at almost all ages augmented by the still unconscionably high rates of mortality. What is even worse is that, in spite of a substantial progress in medical and public health facility and the improvement in agricultural production, this depletion shows not only no sign of abatement but steady deterioration from a figure of 1972 in 1901 to 929 in 1991. This is undoubtedly the cruellest aspect of our demographic status, despite the improvements we may have made in the social, economic, political and organisational fields. So long as this ratio does not markedly improve in favour of females, we shall have achieved little by way of improvement in the demographic as well as social and economic structure of our body politic.

The Census of 1991 has placed the literacy rate of population aged 7+ at 52.1 per cent – 63.9 percent for males and 39.4 percent for the females in this age. The dropout rate of boys at primary level in 50% and that for girls more than 70 percent. While the percentage of literacy has been going up in India, the absolute number of illiterates has been growing. Between 1951 and 1991 while the percentage of literacy rose from 18.3 to 52.1, the number of persons who are illiterate increased from 300 million to 324 million. The World Bank estimates that at the existing rates of growth of population India will contain more than half the global illiterates in the age group of 15 to 39 by the turn of the century. Other countries like China and Sri Lanka had achieved higher literacy levels even by the year 1980. Not only smaller city states of Singapore and Hongkong, but also countries such as Sri Lanka, Taiwan, Malaysia, Philippines and Indonesia have achieved higher levels of literacy than India, and especially for females. The pace of development in terms of employment, urbanization and industrialisation seems to be very closely related with the pace of improvement in the literacy levels of population.

Within India, we see wide variations among different states in the literacy level of population. Kerala has the highest literacy rates of 90.6 percent among population aged 7+, with 94.3 percent among males and 86.9 percent among females. All the southern states (excepting Andhra Pradesh) Maharashtra, Goa, Mizoram, Delhi, Chandigarh, and most of the north-eastern states, have achieved significantly high level of literacy (over 60 percent). The large Hindi speaking states of Uttar Pradesh, Madhya Pradesh, Rajasthan and Bihar have literacy rates lower than the national average, both for males and females. For example, Bihar and Rajasthan have the lowest female literacy rates with only 23 and 20 percent of females age 7 and above being able to read and write.

There is enough, evidence now to show that high literacy rates – especially high female literacy rates are associated with low rates of population growth. Kerala is an outstanding example where high (especially female) literacy rates have gone hand in hand not only with low rates of growth of population but with superior performance in terms of a number of health indicators such as infant mortality rates, death rates, sex ratios and so on. In sharp contrast, abysmally low rural female literacy rates are associated with both high population growth rates and poorer performance in terms of health indicators – as the case of Hindi States demonstrates.

Example of Kerala

The impressive achievements made by Kerala State is a demonstration of the salutary effect of the spread of education among the people, accelerating the attainment of development goals. With a high density of population and below national average per capita income, Kerala has achieved the highest life expectancy of 66 years and the lowest death rate for every age group among all states. Furthermore, following 70 years in which its birth rate exceeded that of India as a whole, from 1971-81, Kerala's population growth rate dropped from 2.26 percent per year to 1.74 percent per year. Today it stands at 1.31 percent per year, much below the population growth rate of the entire country, which is 2.11 percent. Most significant of all, Kerala has experienced substantial decline in infant mortality rates. Between 1921-30, its IMR was estimated at 210. Today it stands at an impressive 27 per 1000 births against the national average of 95.

With the current census data indicating literacy levels of over 90 percent, Kerala has crossed the threshold of total literacy. It is evident that levels of achievement in literacy, population growth, life expectancy and infant mortality are interrelated and are also mutually reinforcing. Kerala's success in pushing literacy may have thus shown a way around some of the critical obstacles to the nation's welfare and prosperity.

The success of Kerala is mainly attributed to education especially education of women. The state has recently been declared totally literate. More important is the fact that the literacy rate for female is 86.93 - one of the highest in Asia.

Thus for the majority of State in the country, discrimination against girls in the matter of educational opportunity is the biggest practical mistake. Regarding girls' education; it is ironic and tragic that it is not the father, not the brother, it is not the school master, it is normally the mother who does not allow the girl to go to school. She likes to keep the girl at home to help her in the house. One never understood what she did before she had the first daughter but somehow it seems to function before the first daughter came along. But after the first daughter comes along, it becomes very difficult to function in the house without having the daughter at home. But, we have to break this first major barrier which is to allow the girls to get education. Again, that is a vicious circle because it is the illiterate mother who does not allow her daughter to go to school. Once you cut into that cycle at any one point, the cycle breaks, for once the girl is educated, even if it is to a limited degree, she will see to it that her daughter does get educated. I think for the rural areas it is as critical as it is for the urban areas, perhaps even more so, because attitudes in the rural areas are much behind the attitudes in the urban areas, specially where liberalising attitudes towards women are concerned.

Over many years and in many countries, the education of women has been shown to be associated with the confidence to adopt new ways, the propensity to make greater use of social service, the ability to earn higher incomes, the improvement of child care and nutrition, the reduction of child deaths, the acceptance of family planning, the reduction of average family size, and the literacy of the succeeding generation. As Gandhiji aptly put it, "You educate a man and you educate an individual, you educate a woman and you educate a family."

We have to accomplish the task of making vast changes in our society in order to make it healthy and conducive to human growth and fulfilment. As Swami Ranganathananda points out, "It is through the possession of a strong character with deep and rationally held convictions within, that one becomes capable of making an impact on society. A man or a woman with only a bundle of opinions cannot move society; 'but great convictions are the mothers of great deed,' says Swamy Vivekananda and adds : A hundred such, and the world becomes revolutionized."

The hope of revolutionising the world through deeds born of great convictions rests on institutions like this, which lays great emphasis on imparting a sense of values to the students and develop them as integrated personalities.

The Year That Was

Extracts from the Report

By

Dr. Rajammal P. Devadas

Vice-Chancellor

New Courses

During this academic year, M.Sc. Computer Science and M.C.A.,with assistance from UGC have been started with an enrolment of 30 students each. M.Phil. in Family and Community Science was also started during the year.

NSS for all the Undergraduate Classes

Our proposal to integrate NSS in the undergraduate classes has been sanctioned by Government of India and Government of Tamil Nadu. Hence, with great dedication, the work has been started with curricular credit for theory and practicals.

Exchange agreement

The institutional agreement between Avinashilingam Institute and the Oregon State University, Corvallis, Oregon, USA (OSU-USA) for exchange of Professors between the two Universities, six from each side, between 1990 and 1992, started functioning from January, 1991. The focus of the project is on the contribution of women and households to national development in areas such as public health, nutrition, anthropology and family resource management.

Refresher & Training Courses, Seminars

Refresher Courses

Three Refresher courses of 21 days duration sponsored by the University Grants Commission, for the senior inservice College/University teachers from the Southern states were conducted during this academic year. The first course was in the areas of Family Resource Management and Textiles and Clothing. The second course was for the teachers in the field of Food Science and Nutrition. The third course was in the areas of Human Development and Family and Community Sciences.

Training for TINP

Our University has been the Training Institute for the functionaries of the Tamil Nadu Integrated Nutrition Project(TINP) sponsored by World Bank and Government of Tamil Nadu. We have trained batteries of trainers for TINP I including the pilot block of Kottampatti. For TINP phase II a two month's training for 63 Supervisors of the Tamil Nadu Integrated Nutrition Project has concluded. The second batch of 32 supervisors of TINP are undergoing the two months training programme.

Trainer's Training

The Trainer's Training Centre sponsored by ICAR completed training 19 instructors of Home Science from different Krishi Vigyan Kendras from 13 states.

Bajaj Centenary Seminar

In collaboration with the Gandhigram Rural University and the Bajaj Centenary Celebration Committee, a one day seminar on Social Responsibilities of Industry was conducted on 2-4-1991 in which over 40 industrialists participated.

Workshop for Science Programmes

In collaboration with the All India Radio, New Delhi, a five day workshop was conducted on Science Programmes over the AIR.

Ambedkar Birth Centenary

A symposium on the contributions of Dr. Ambedkar was organised on 23-3-1991.

Extension Courses

Two short courses for home makers of Coimbatore were conducted by the Food Science and Nutrition Department in collaboration with the ICAR sponsored Trainer's Training Centre of the Institute. The first course was in Food Preservation for 46 participants. The second course was on Bakery, for 52 participants.

National Integration Camp

As commissioned by the Department of Sports and Youth Affairs of the Government of India, Ministry of Human Resource Development, a National Integration Camp was held from January 12th to 19th, 1991 in our University. From 13 States, 16 colleges and one school and 36 Universities and one Directorate of Secondary Education, 375 volunteers participated.

Awareness Camp and other Meetings

Awareness camp for voluntary agencies, a regional seminar on Physical Education, a Symposium on Harmony of Religions, Seminar on Women's Development, Seminar on Rural Development, a DANIDA Assisted Workshop on Relevance of Home Science in Primary Health Care, and a UNICEF Assisted meeting on Vitamin A deficiency and anaemia were the other useful activities organised.

Braille Mathematics Code

A Refresher Course in "Braille Mathematics Code" was organised by the Faculty of Education for the teachers of the Visually Handicapped. This was sponsored by the National Institute for the Visually Handicapped, Dehradun.

New Courses to be Introduced

The UGC has accorded sanction for starting B.Ed. and M.Ed. courses in Integrated Special Education and Community Based Rehabilitation.

Interaction with Industry

The University is collaborating with the Sakthi Soyas for nutritional assessment of the defatted soya flour produced by them. The Annapoorna Group of Hotels have sought the Assistance of the University for testing the shelf life of some of their products.

Summer Part-Time Courses for Higher Degrees

Sequential courses towards, M.Phil/Ph.D. degrees are offered during the summer vacations to help working women.

National Literacy Mission

As part of integration of Literacy work with the curriculum, postgraduate students are deployed for another year to carry out literacy work in the five wards of Coimbatore Corporation to achieve total literacy in the five wards.

Preparing Women Candidates for Competitive Examinations

A Cell for preparing aspiring women candidates for the competitive examinations conducted by the UPSC such as IAS, IFS, IPS etc. has been set up with financial and technical assistance from the Department of Backward Classes of Government of Tamil Nadu.

Audio Video Cassette Lessons in Home Science

Two hundred lessons of 25-30 minutes duration each in Home Science, as commissioned by the UGC, have been completed.

Action Research Projects

Several Action Research Projects are being undertaken in collaboration with UGC, ICAR, ICMR, ICSSR, Food and Nutrition Board, National Technology Mission for Adult Education. Council for People's Action and Rural Technology (CAPART), Departments of Energy, Environment, FAO, UNICEF, UNESCO, WHO, USAID, SIDA, IDRGC, CIDA, USDA, DANIDA and others.

The Ad-hoc Research Scheme entitled, 'Nutritional Evaluation of Red Palm Oil' has been sanctioned by Indian Council of Agricultural Research (ICAR) at a cost of Rs. 1.75 lakhs for a period of 3 years.

The Ministry of Environment and Forests Department, Department of Environment Forests and Wild Life, Government of India, has sanctioned a project "Exploitation of Microbial Systems" associated with Forest Tree Species for the Eco Development of Vivekanandapuram area of Karamadai Block' at a cost of Rs. 54,000.

The Department of Science and Technology, Government of India, has sanctioned Rs. 1,00,000 for a period of one year for a project entitled "AICP on Low Cost Preservation of Horticultural produce".

INDIAN INSTITUTE OF TECHNOLOGY : DELHI

HAUZ KHAS : NEW DELHI - 110016

ADMISSION NOTICE FOR SPECIAL POSTGRADUATE PROGRAMMES

Advt No. IITD/PGS/2/92

Applications are invited for admission to the following Special Postgraduate Programmes for the session 1992-93 commencing July, 1992.

INTERDISCIPLINARY M.TECH. PROGRAMMES:

(a) **M.Tech in Management and Systems** Part-time (Evening) programme for sponsored executives from the Public Sector Undertakings, Administrative Ministries and State Level Undertakings only.

(b) **Postgraduate Modular Programme in Management and Systems** For sponsored executives from Public/Private/Joint/Government Sectors. The programme consists of three modules. A student will be awarded a certificate in "ORGANISATIONAL STUDIES" on completion of only the first module: a certificate in "PRODUCTIVITY STUDIES" on completion of the only the second module: a diploma in "MANAGEMENT AND SYSTEMS" on completion of the first two modules: and a degree of M.Tech in "MANAGEMENT AND SYSTEMS", on completion of all the three modules. Continuation from one module to the next is not automatic but is subject to specific request of the candidate to do so and on the basis of satisfactory performance in the previous module/modules completed.

(c) **M. Tech. in Energy Studies:** Part-time (Evening) programme for employees sponsored by R&D Organisations, Public Sector Undertakings, Govt. Departments or Private Industries. The programme covers the energy aspects of conservation, Economics & Planning and Renewable Energy Technologies.

ELIGIBILITY

(i) Programmes for Management and Systems

Bachelor's degree in Engineering/Technology with a minimum CGPA of 6.75 on a 10-point scale or equivalent as determined by IIT, Delhi, wherever letter grades are awarded or 60% marks in aggregate wherever marks are awarded.

(ii) Programme for Energy Studies

Bachelor's degree in Chemical/Electrical/Mechanical Engineering/Technology or Master's degree in Physics with CGPA/marks as mentioned at (i) above.

(iii) For all the three pogrammes, candidates should have a minimum of 2 years relevent experience as on 1st August, 1992.

RESERVATION

15% seats are reserved for Scheduled Caste candidates and 7.5% for Scheduled Tribe candidates in the aforesaid programmes.

FEES

The fee for the programme is based on the number of credits registered for and is approximately Rs.3000/- per semester. Details are available in the Information Brochure to be supplied along with the prescribed application form. The fee for all these three PROGRAMMES is payable by the sponsoring organisation only.

DURATION OF THE PROGRAMME

(i) A part-time M.Tech candidates is expected to complete the programme in 5 semesters but not more than 8 smesters (4 years).

(ii) Modular Programme provides flexibility in completion of an adequate credit requirements for a certificate, diploma and degree in a maximum of 2,4 & 6 years respectively.

CLASS TIMINGS

(a) M. Tech. in Management and Systems: 6.00p.m. to 9.00 p.m.

(b) Postgraduate Modular programme: 8.00 a.m. to 10.00 a.m.

(c) M.Tech. in Energy Studies: 6.30 to 8.30 p.m.

on week days for theory classes,

and lab. classes on Saturdays/Sundays.

HOW TO APPLY

Candidates employed in and around Delhi (within a radius of 50 Km. of IIT, Delhi) only are eligible for admission to these programmes. Application form and Information Brochure can be obtained from the Asstt. Registrar(PGS) by sending application fee of Rs. 25/-by a crossed Bank/Demand Draft Drawn on STATE BANK OF INDIA in favour of IIT, Delhi payable at SBI, IIT, New Delhi, along with a self-addressed envelope (25cm x 11cm) affixing postage stamps worth Rs.2.00 and superscribed **"Application for M.Tech."** Application forms can also be had from the Counter (Room No. AD-236) against Bank/Demand Draft for Rs. 25/- drawn on STATE BANK OF INDIA ONLY During Working Hours. THE NO. AND DATE OF THE BANK DRAFT SHOULD BE MENTIONED BY THE CANDIDATES AT THE APPROPRIATE COLUMN WHILE SUBSEQUENTLY SUBMITTING THE COMPLETED APPLICATION FORM ALONGWITH TESTIMONIALS.

The completed applications alongwith the sponsorship certificate and other testimonials should be sent by the candidates direct to the Asstt. Registrar (PGS), Indian Institute of Technology, Hauz Khas, new Delhi 110016. Those who wish to apply for admission to more than one programme should make separate application with prescribed fee. The application form at the top with all enclosures placed below, should be secured together tightly with a tag before mailing,

INTERIM ENQUIRIES WILL NOT BE ENTERTAINED.

Last date for supply of application forms:

By post : **18.5.1992**

At the counter : **25.5.1992**

Last date for receipt of the completed application forms : **25.5.1992**

ASSTT. REGISTRAR(PGS)

Computer for the Blind

"We have developed the first system of its kind in the world which would make available to a blind person the computer as a communication mode. Till now the visually handicapped persons were unable to have the benefit of the use of a computer as they did not have access to the monitoring screen being unable to see. But with this new system the sightless too will be able to view diagrams and texts from a computer", said Prof. Sujoy K. Guha from the All India Institute of Medical Sciences (AIIMS) who had set up the Centre for Biomedical Engineering jointly at AIIMS and the Indian Institute of Technology (IIT), Delhi, in the early 1970s. Dr. Guha said the new system called Universal Graphical Braille Classroom Communication system would be a novel teaching as well as reading aid for the visually handicapped.

Describing the system, he said the visual matter on the screen is converted to vibrotactile, vibro meaning vibration and tactile being feeling of touch. It comprises a computer and a self monitor. The concept being that the computer remains on the desk of the teacher and the monitors on the tables of blind students. Whatever the teacher puts into the computer whether text or graphic matter gets displayed on each monitor. The blind student then passes a special sensor against the screen where the illustrations are presented to him in vibrotactile. Should the student want a copy of the diagram for reference, there is a simple low-cost attachment for making a copy. This diagram is in the form of elevated dots and is taken on special plastic paper called INDUBRAIL.

Prof. Guha said he had been working on this system for well over four years and it was only last year that the shape was given to it. He said in addition a modified version of the same system has been also developed which is a hand held one. At many places like airports the television monitor is kept at standing height. With the hand held pocket system the blind person can simply pass it on the screen and read the information.

Prof. Guha said while they are yet to come in the market the cost of the basic computer would be about Rs.25,000 and that of the monitor Rs.2,500.

He said this was a major breakthrough in developing teaching and reading aids for the blind.

Indian Achievements in Mathematics

"Everything we study in mathematics up to the senior secondary level was more or less known to Indian scholars by the 17th century. But we have never bothered to find out what all the Ancient Indian Mathematics has in store. We blindly look upto the West as our source of knowledge", said Prof. J.N. Kapur, an eminent mathematician in Jawaharlal Nehru University while speaking at a seminar on "Ancient Indian Mathematics and its Relevance to Modern Mathematicians" held in New Delhi recently. He said Indians were the first to talk about the negative and zero numbers while the Greeks were even scared to believe that such a thing could exist.

The Pythagoras theorem was known to us 2,800 years ago and students in our schools were studying things only because they had been discovered by the West. Prof. Kapur observed that Indian mathematics was in fact more practical than the greek, it was for this reason that Indian mathematics was in fact more practical than the Greek, it was for this reason that Indian mathematics could be applied to science and technology while the Greek mathematics could not.

On the occasion, a book, "A Modern Introduction to Ancient Indian Mathematics", written by Mr. T.S. Bhanumurthy was also released. Prof. Kapur said it was a well written book and it would generate interest about ancient mathematics in the common man.

National Institute of Advanced Studies

Bharat Ratna Mr. J.R.D. Tata laid the foundation-stone for the main building of the National Institute of Advanced Studies in the Indian Institute of Science, Bangalore, recently. Speaking on the occassion, Mr. Tata said the philosophy behind the work of the Institute was to provide an atmosphere of multi-disciplinary research involving both science and humanities, among other subjects such as psychology, philosophy and sociology.

Mr. Tata said the institution had been formulated on the advice given by a panel of intellectuals, from different walks of life.

The courses offered by the Institute aimed at concentrating on advanced studies especially in branches of knowledge where science overlaps with humanities. Young intellectuals from Government departments and the private and public sectors could participate in the courses, he said.

Dr. Raja Ramanna, Director of the Institute, in his welcome address, said for the projects connected with advanced studies, several visiting chairs were created. Besides, research on important projects in the fields of psychology, mental health and yoga was also taken up.

He said the Institute proposed to take up studies on technology development in the country and other issues in the coming years.

Gauhati University Convocation

Addressing the 18th convocation of the Gauhati University, the Union Finance Minister, Dr. Manmohan Singh, stressed the need for vocationalisation of education. He also expressed the view that training for entrepreneurship and for gainful self-employment ventures should be given adequate emphasis. "The entrepreneurs must have the assurance of speedy response from the State Government and bureaucratic delays should be avoided."

He also laid emphasis on the development of agriculture and tourism in Assam.

Dr. Singh said that the universities and other educational institutions had a crucial role to play for the development of the State. He pointed out that education had a vital role to play in the task of nation-building. "No less important is its role of inculcating right values among the youths," he said.

The Governor of Assam, Sri Lok Nath Mishra who presided, called upon the students to utilise their education for the benefit of the State and its people. Sri Mishra, who is also the Chancellor of the University said before the establishment of the university the students of the North-Eastern States had to go to Calcutta or other places of the country for higher education.

Sri Mishra revealed that the University now had 36 postgraduate departments and 124 colleges affiliated to it.

The Vice-Chancellor of the University, Dr. Nirmal Kumar Choudhury, dwelt at length on the growth and development of the university. He also recalled the achievements of the students and teachers of the university in different fields of life.

Dr. Choudhury expressed the view that there was nothing basically wrong with the education system of the university. He said that the university had proved its usefulness by creating the educated manpower to manage the affairs of the State. "This, however, does not mean that the education system does not need changes. But before we try to bring changes we must have crystal clear idea about the objective", he added.

Dr. Choudhury said that the University had taken a number of steps for the development of colleges. He revealed that a 10 member delegation of the UGC visited the State recently to assess the 8th Plan development needs of the colleges. He claimed that as per eligibility criteria about Rs. four crores were expected to be alloted to the colleges under the University under the 8th Plan.

IGNCA: Treasure of Indian Art & Culture

The Prime Minister, Mr. P.V. Narasimha Rao, highlighted the need to train younger generation of academics to delve into the vast traditional heritage of knowledge to be found in the ancient Indian texts.

He released ten publications of the Indira Gandhi National Centre for Arts (IGNCA) in New Delhi recently. The Prime Minister lauded the work done by the centre in collecting, collating and putting in perspective a wide spectrum of research on India's traditional art and culture.

"The effort should be to lay the sound foundations for a centre which when complete would be a source of pride not just for India, but for the entire orient, a centre that would be not merely a source of pride, but would be useful to the entire mankind", Mr. Rao said.

India was much more than a geographical entity. India was a concept which had given something "immeasurable" to world culture and the task of the Centre was to collect, collate and make coherent the sum total of India's knowledge, Mr. Rao said.

The quest to reach the depths of knowledge was not confined to India but was going on simultaneously in different parts of the world. India too had to contribute to this quest, Mr. Rao said.

The Prime Minister appealed to the Finance Minister, who was present on the occasion, to augment the budget of the IGNCA so that many more young people could be trained to carry on the work begun by the centre under its present head, Dr. Kapila Vatsyayan.

The Human Resource Development Minister, Mr. Arjun Singh, said in the four years of its existence, the centre had established a "distinctive personality" which was evident by its work.

Mr. Arjun Singh said the centre through its programme divisions of *kala kosa* and *janapada sampada* had demonstrated the need to interrelate the texual and oral traditions.

Dr. Kapila Vatsyayan said the publications reflected the wide spectrum of research conducted under the aegis of the IGNCA.

These ranged from ancient rock art to modern architecture and from a fundamental concepts of the Indian tradition, a treatise on puppetry, to one of the early texts on Indian music theory.

Entrance Test for Professional Courses

Panjab University, Chandigarh, is reported to have decided to hold a combined entrance test for professional courses on June 21, 22, 1992. According to the Controller of Examinations, Mr. B. L. Gupta, who is also officiating as the university's, Registrar, the same test will be "valied" for the professional courses depending, however, on the main stream a student decides to appear in.

The university will conduct these tests at Chandigarh, Delhi, Ludhiana, Jalandhar and Bathinda. It expects at least 20,000 students to take the examination in engineering, medical, architecture, honours school courses and pharmacy.

The medical examination for admission will be for Dayanand Medical College and Christian Medical College, both at Ludhiana, while engineering entrance test will be for all the universities in the State besides Thapar Engineering Institute, Patiala. The architecture courses are at Chandigarh, while campus offers honours school courses.

This combined test is being conducted in the larger interest of students because earlier three different tests were conducted for honours courses, engineering and medical courses.

UNESCO Plans Teaching Scholarships

Along with funding agencies like the UNDP, UNICEF, the UN population control agency and other sister bodies, the UNESCO in India hopes to spend some of the World Bank's $3 billion marked for education. This was indicated by Dr. Federico Mayor, the UNESCO Chief who visited India recently to officially declare Wardha fully "literate" at the 92% level. Another major purpose of his visit, Dr. Mayor said, was scientific intercourse with the technocrats of the Bombay Indian Institute of Technology and the Tata Institute of Fundamental Research. Besides helping in the setting up of the IITs, the UNESCO has earlier helped in funding long-term scholarships for higher education in various fields of science and technology.

This having resulted in considerable brain drain, the UNESCO is now thinking in terms of short-term teaching scholarships to candidates from Indian universities. This, the organisation feels, will contain the brain drain and in Dr. Mayor's words: "Establish a relationship between the industry and the universities in India".

Tracing the history of literacy and development in the West, one finds that greater urbanization brought greater literacy.

This subcontinent, however, is going through a historical reversal. Greater urbanization has so far shown that fifty percent of the burgeoning urban population is without any reading, writing and counting skills. This was not so in 1835 when William Adam had observed in his first report on education in India that there seemed to exist nearly 1,000,000 village schools in two Indian provinces alone. A hundred years later, when Mahatma Gandhi said (in 1931) "India today is much more illiterate", the British rulers were offended by the statement of truth.

Effective percolation of basic literacy, let alone imparting vocational training and technical skills, still remains a dream in rural areas. Dr. Mayor, however, is very optimistic. He spoke about a network of informatix that UNESCO will pilot in India with an experts panel meeting later this month to decide on the details. He also promised greater involvement in the vocational training courses sponsored by the agency.

Tagore's Works in 14 Languages

The Visva Bharati authorities have been exploring possibilities of a collaborative arrangement with the National Book Trust for bringing out translations of Rabindranath Tagore's works in at least 14 Indian languages, according to its Vice-Chancellor, Prof. Sabyasachi Bhattacharya.

Describing such a venture as "difficult", Prof. Bhattacharya said that the Visva Bharati was, however, considering a suggestion of the Sahitya Akademi "and other agencies" with regard to publication of some of Tagore's selected works in English. The university's publication department, he said, brought out 55 titles last year, of which three were new titles, which included a

Hindi translation of a famous work of renowned artist Nandalal Bose.

Support for Pvt Vocational Institutes

The West Bengal Government is reported to have decided to support private institutes offering technical courses and management studies to enhance the standard of job-oriented education in the State. This was disclosed by the State Minister for Technical Education and Training, Mr. Bansagopal Chowdhury while addressing the 11th convocation of the Bharatiya Vidya Bhavan's College of Communication and Management at the Salt Lake campus in Calcutta recently. Mr. Chowdhury said,"Although there has been a growing demand for job-oriented courses, it would be impossible for the State Government to open more institutes due to financial contraints. And this is where the private institutes have major role."

Fellowship of the British Psychological Society

Professor Ramadhar Singh, an alumni of the University Department of Psychology of Bihar University, presently at the Department of Social Work and Psychology of the National University of Singapore, has been elected a fellow of the British Psychological Society.

The honour has come to him for his scientific achievements in the field of psychological leadership theories and contributions to cross-cultural and developmental psychologies. With his periodic contributions to several international journals he has earned the reputation of a recognized authority in areas such as attraction- repulsion and equity theories.

Rajiv Gandhi Sanskrit Vidyapeeth

The Kendriya Sanskrit Vidyapeeth, set up at Sringeri by the Rashtriya Sanskrit Sansthan, has been named after the former Prime Minister Rajiv Gandhi. This was revealed by the Union Human Resource Development Minister, Mr. Arjun Singh, in the Rajya Sabha recently.

News from Agricultural Universities

New Thrusts in Agricultural Engineering

The Scientific Workers' Conference in Agricultural Engineering was held at Tamil Nadu Agricultural University recently to take stock of the situation and decide on the new thrusts in agricultural engineering in Tamil Nadu. The conference deliberated on the major action strategies for implementation for the welfare of the farming community. These strategies are mainly intended to reduce the drudgery in field operations, particularly for womenfolk and increase the work efficiency depending on the soil type of the tract.

The Conference strongly felt that there was great scope for introducing the scientific engineering techniques/methods into the farming community and enthuse them for wide scale adoption.

Dr. S. Jayaraj, Vice-Chancellor, Tamil Nadu Agricultural University, Thiru. S. Krishnaswamy, Chief Engineer (River Valley Project), Agricultural Engineering, Madras and other research and development officials participated in the deliberations. The Conference made the following recommendations :

(i) The type of equipments to be used for summer ploughing for red soil and vertisol in dryland is to be identified and evaluated for performance in comparison with method in South Arcot and Aruppukottai. The rainfall pattern, moisture content of soil at regular intervals, cost of operation, plant population under uniform sowing condition and crop yield will be simultaneously recorded.

(ii) The utility of the sub-soiler will be demonstrated for breaking the hardpan at ten locations in Coimbatore and Udumalpet and feedback information from the farmers will be analysed.

(iii) A successful paddy transplanter will be developed and demonstrated in Tanjore and Madurai districts soon. This new unit will be compared with manual transplanting. The plant population, plant injury, crop establishment, uniformity of spacing and crop yield will be recorded for comparing the efficiency of the new paddy transplanter.

(iv) The self propelled paddy harvester developed at the College of Agricultural Engineering, Tamil Nadu Agricultural University will be demonstrated for performance in collaboration with Krishi Vigyan Kendras of Madurai, Trichy, Coimbatore and Pondicherry and State Department of Agricultural Engineering and the feedback information will be analysed.

(v) A successful tractor operated

Groundnut harvester will be developed and demonstrated. The coverage, percentage of unearthed pods, percentage of damage and moisture content of soil will be recorded.

(vi) The Groundnut thresher (power operated) developed by Tamil Nadu Agricultural University will be demonstrated for popularisation in potential groundnut areas like Pollachi and tindivanam.

(vii) For increasing the employment opportunities of agricultural engineering graduates, several agro-based optional subjects will be introduced in curriculum. The optional subjects will be related to Dairy Engineering, Pesticide and Fertilizer Industry, Essential Oil Extraction Industry, Rice Processing Technology, Tea, Coffee Processing Technology, Fibre and Coir Industry Technology and the like.

(viii) The axial flow pump will be popularised through the Department of Fisheries for Agriculture, method demonstrations will be conducted.

(ix) Evaluation of recharge effects of percolation ponds by selecting two percolation ponds - one in red soil, another in black soil - and identifying 10 to 15 wells around each pond. The water level observations, plenitude of recharge, quality of water etc. will be observed.

(x) The water management aspects of irrigated dry crops like groundnut and gingelly in LBP area will be studied.

(xi) A low cost flow measuring device for framer's use will be developed.

(xii) The performance of Vetiver as a soil and moisture conservation measure in actual field condition on a large scale in Chengalput MGR, North Arcot Ambedkhar, Dindugal Anna, Pasumpon Thevar, Nellaikattabomman and VOC districts will be studied.

(xiii) There is a great need than ever before to bring out research data on methods of processing foodgrains, vegetables and flowers. The research and development strategy will concentrate on evolving simple methods which can be easily adopted by farming community to store the produce for a longer time or to process them to earn more profit and income.

(xiv) The processing equipment recommended for popularisation are Seed Pelletiser (all districts), Household Paddy Parboiling Unit (North Arcot and Tanjore), Tapioca dripper (Salem), 4-roller Sugarcane Crusher (Salem and Coimbatore district) and Gingelly Seed Grader (South Arcot and Trichy districts).

(xv) For wasteland development, chisel plough will be used for breaking the hardpan in order to improve the infiltration rate and water-holding capacity and composted Coirpith will be used for increasing the water-holding capacity and soil fertility.

These new thrusts formulated on meticulous deliberations would make a great breakthrough in agriculture by simplifying the farming operations and increasing the productivity, it was felt.

Training on Biofertilizers

The State Level Training Course on Use and Promotion of Biofertilizers to Agricultural Officers of Tamil Nadu, organised by Regional Biofertilizer Development Centre, Ministry of Agriculture, Government of India and Tamil Nadu Agricultural University (TNAU), was recently inaugurated at the TNAU. In his inaugural address, Dr. S. Jayaraj, Vice-Chancellor of TNAU called upon the Biofertilizer Scientists to identify crop variety specific, soil specific and season specific biofertilizer strains in order to reduce the fertilizer bill and in turn reducing the cost of cultivation on the part of farmers.

"To feed future generations without degrading the resource base that supports its productivity, agriculture must become ecologically sustainable. Through organic farming, the state of sustainability could be achieved. It is not the question of delinking the chemical fertilizers from the agricultural production scenario; it is largely a question of how best it could be tackled through Integrated Nutrient Management Strategies aiming towards sustainability", the Vice-Chancellor said.

Stressing the utility of biofertilizers viz.; Nitrogen fixing, development of resistance to pests and diseases, resistance to drought conditions, the Vice-Chancellor said that South Indian temperature was more favourable for the production of biofertilizers. The utility of the biofertilizer *Rhizobium* in fixing atmosphere nitrogen in the root nodules of pulses and groundnut had been well recognised, he added.

The other organisms such as *Azospirillum* and *Azotobactor* are well known symbiotic, associative organisms which fix nitrogen in a variety of crops such as rice, sugarcane, cotton, oilseeds, millets etc. Another bacterium, viz: *Phosphobacterium* is able to mobilize phosphorus in the soil and supply to many crops. The beneficial fungi belonging to Vesicular Arbuscular Mycorrhyzae (VAM) is very useful in many tree crops as well as seasonal crops by way of mobilizing phosphorus and controlling the root pathogens.

In addition to the role in nutrient supply, some of the biofertilizers like *Azospirillum* are known to promote the root growth resulting drought tolerance in the crops. Fermentation technology has been perfected for large scale manufacture of many biofertilizers for commercial exploitation.

Dr. Jayaraj impressed upon the participants on the fertilizer use demand of NPK which has increased one and a half times from 63 kg in 1989-90 to 93 kg within a passage of a decade. This has to be balanced with biofertilizers.

Dr. G. Perumal, Director of Extension Education, TNAU, in his introductory address stressed the importance of biofertilizers and the need for imparting its utility to the farming community. Dr. Balasubramaniam, Professor and Head, Department of Microbiology, welcomed the participants and outlined the research and development thrusts in biofertilizers.

News from UGC

Countrywide Classroom Programme

Between 24th April to 30th April 1992 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 1.00 p.m. to 2.00 p.m. and 4.00 p.m. to 5.00 p.m. The programme is available on the TV Network throughout the country.

Ist Transmission

1.00 p.m. to 2.00 p.m.

24.4.92

"Number Systems"

"Prof. John: Profile of an Educationist"

"A Seven Point Action for Malaria Control in Madras"

25.4.92

"Folk Theatre-Yakshagana"

"Innovation: Picture Perfect"

"The Week Ahead"

26.4.92

No Telecast

27.4.92

"Wind Power"

"New Trade Policy"

28.4.92

"Distillation"

"Tibetean Studies Contribution to Indology"

"Role of Herbal Medicine"

29.4.92

"Innovation: A Sound Idea"

"Numismatics"

"Tips on Saving Fuel"

30.4.92

"Poetry on Wheels"

"The Pursuit"

"Yours Sincerely"

IInd Transmission

4.00 p.m. to 5.00 p.m.

24.4.92

"Sarvam Saha: Echoes from the work site"

"Towards the Mysteries of Life"

"Effects of Noise Pollution on Health"

25.4.92

"The hand that creates—I: Introduction"

"South West German Mosaic"

"The Week Ahead"

26.4.92

No Telecast

27.4.92

"Electromagnetic Induction"

"Management—XII: Bureaucracy"

"Saga of skill—III: Process of Silk"

28.4.92

"Nomenclature of Organic Compounds—II""Is Tense System in English a Problem"

"Dinosaur—IV: The Dinosaur with Sings"

29.4.92

"An Introduction to Piston Design and Manufacturing"

"Forts of Deccan—I: Daulatabad"

30.4.92

"Poetry on Wheels".

"The Pursuit"

"Yours Sincerely"

Test for JRF, Lecturership

A total of 656 candidates have qualified for the University Grants Commission's Junior Research fellowship, while 1,105 have cleared the eligibility test for lecturership, it is reported.

A total of 19,095 candidates appeared in the UGC test for the JRF and eligibility for lecturership held on December 22, 1991, in 126 subgroups of 86 main subjects in humanities and the social sciences, including languages, at 83 university test centres throughout the country.

A total of 25,096 candidates had got themselves registered for this test. The UGC holds these national level tests twice a year.

The next UGC test for JRF and eligibility for lecturership will be held on June 21, 1992. The last date for submitting applications is April 30, 1992.

News from Abroad

Making Teaching Attractive

China is to spend an extra 100 million on its teacher training institutions over the next three years in an attempt to boost recruitment to the profession which has dropped drastically in recent years.

The sum includes 8.4 million in World Bank loans, made specifically for the purchase of equipment and for improving the conditions and quality of training in more than 25 teacher training institutions of higher education, and 72 inservice teacher training colleges.

About 1.5 million was provided by the United Nations Children's Fund (UNICEF) for improving the conditions in 153 secondary teacher training colleges.

The allocation, together with corresponding increases in State and local Government budgets, are designed to boost the country's teacher education network, which according to the Chinese State Education Commission, is being significantly reshaped during the current five year development period.

It was also part of an effort to make teaching more attractive to graduates, who generally see teaching as a job with no future. The number of recruits to teaching has dropped drastically in recent years.

Inservice teacher training is to receive the biggest boost. The Commission says it is setting up a "multi-level and multi-format network" to cover its 265 inservice teacher training institutes at both provincial and municipal levels, with a total of 250,000 students.

Also affected are 2,000 inservice teacher training schools at the province level, with 530,000 students enrolled this year. Provincial teacher training institutes concentrate mainly on training teacher and administrative personnel from senior secondary schools, while prefectural teacher training institutes largely train teachers and administrators from the junior secondary schools.

Also to benefit are China's 257 higher education teacher training institutions and 1,044 secondary teacher training schools, which enrol 679,000 and 670,000 trainees annually.

Help for Chinese Overseas

The Chinese government is planning to establish service centres in several major countries, including Britain and the United States, in order to provide more direct services and better management for its hundreds of thousands of students, scholars and researchers currently studying in overseas institutions.

Under the control of the State Education Commission, the centres will provide overseas Chinese students with reliable information on job prospects at home, help them to find appropriate jobs on their return, and provide information on how to apply for research aid in China, as well as improving support services.

China is also to boost its research assistance programme, initiated a year ago, to provide increased financial help for returned scholars and researchers.

In 1991, more than 400 returned scholars and researchers received State research aid to the value of £2.06 million. In co-operation with the National China Returned Student Service Centre in Beijing, and a number of other similar organisations across the country, the government is establishing the network in a bid to encourage greater numbers of scholars to return and join the modernisation drive.

Around 150 returned overseas Chinese scientists and other specialists in Beijing, who have made outstanding contributions in their fields, were recently the special guests of the Chinese People's Political and Consultative Conference (CPPCC).

The message of the convocation was that the Chinese government is to pay greater attention to science and technology as the "first productive force". Most participants were celebrated scientists who had left favourable working and living conditions in more developed countries to return to their homeland.

Speaking at the gathering were highly honoured scientists who are members of the Overseas Chinese Committee with the CPPCC.

INDIAN INSTITUTE OF TECHNOLOGY, BOMBAY

ADMISSIONS TO

Ph.D./M.Tech./M.Des./M.Sc./DIIT PROGRAMMES

For Autumn Semester, 1992-93 Session

1. DOCTOR OF PHILOSOPHY (PH.D.) in

(i) Aerospace, Chemical, Civil, Electrical (including Electronics) Mechanical, Metallurgical Engineering and Computer Science & Engineering.

(ii) Chemistry, Earth Science, Mathematics and Physics.

(iii) Humanities and Social Sciences (Economics, Psychology, Philosophy, English, Sociology).

(iv) Biomedical Engineering, Corrosion Science and Engg., Energy Systems Engg., Enviromental Science and Engg. Industrial Engg. and Operations Research, Industrial Management, Materials Science, Reliability Engg., Systems and Control Engineering.

Eligibility:

(i) Master's degree in Engineering/Technology.

(ii) A First class Master's degree in Science or a First class Bachelor's degree in Engineering/Technology.

(iii) A Master's degree in Humanities/Social Sciences with a minimum 55% marks.

(iv) M.B.B.S. with one year's internship completed or M.Sc. in Biological Sciences, Occupational/Physiotherapy.

2. MASTER OF TECHNOLOGY (M.TECH.) in

(i) Aerospace, Chemical, Civil, Electrical, Mechanical, Metallurgical Engineering, Earth Science, and Computer Science & Engineering.

(ii) Corrosion Science and Engg., Energy System Engg., Environmental Science and Engg., Industrial Engg. and Operations Research, Industrial Management, Materials Science, Systems and Control Engg., and Reliability Engineering.

Minimum Qualifications For Admission:

A. 3-semester M.Tech. (with scholarship)

B.Tech./M.Sc. or equivalent with a valid GATE score.

B.M.Tech. (Sponsored)

(i) B.Tech./M.Sc. or equivalent with First class with a professional experience of two years or more,

(ii) If the professional experience is less than two years, a valid GATE score is required.

3. 4-semester MASTER OF DESIGN (M.DES.) in

Industrial Design and Visual Communication.

Minimum Qualifications For Admission:

(i) M.Des. (Industrial Design): Bachelor's degree or equivalent in Engineering/Architecture or Professional Diploma of NID, Ahmedabad, (5-year programme).

(ii) M.Des. (Visual Communication): Bachelor's degree in Engineering/Architecture, B.F.A. (Applied Art) G.D. (Art). Five years Professional programme or Professional Diploma Of NID Ahmedabad.

Candidates for M.Des. must have valid GATE/CEED score.

4. MASTER OF SCIENCE (M.SC.) in

Applied Geology, Biotechnology, Chemistry (with specialization in Inorganic, Organic or Physical Chemistry), Mathematics (with specialization in Pure Mathematics, Applied Mathematics, Computer Science or Statistics and Operations Research) and Physics.

Minimum Qualification for Admission:

First Class in B.A./B.SC. with the following stipulations-

(a) Applied Geology—Geology major with Physics/Chemistry/Biology as subsidiary,

(b) Biotechnology—Chemistry or Biochemistry in the final year.

(c) Chemistry—Chemistry in the final year.

(d) Mathematics—Mathematics/Statistics as one of the subjects in the final year.

(e) Physics—Physics (major) with Mathematics as subsidiary.

For (a), (b) and (c) the candidates must have taken Mathematics in 10+2 level.

5. General Information

(i) Details of prescribed qualifications, specializations available, scholarships etc. will be found in the Information Brochure. For admission with scholarship candidates must hold GATE, UGC, CSIR, CEED or BIOMEET valid results.

(ii) Information Brochure and Application forms for all programmes may be obtained from the Deputy Registrar (Academic), Indian Institute of Technology, Powai, Bombay-400 076, on request accompanied by Demand Draft of value Rs. 15 for Ph.D. and M.Des. or Rs. 35 for M.Tech. and M.Sc. The Demand Drafts should be payable to Indian Institute of Technology, Bombay, and drawn on any scheduled bank. A self-addressed stamped (Rs. 3/-) envelope of size 27 cm x 12 cm superscribing the name of the programme for which the form is desired must be enclosed along with the request.

(iii) Application forms will be available from 7th April onwards. Last date for supply of blank forms is **15.5.92.** Completed application forms must reach the Institute at the address specified in the brochure by **18.5.92.**

(iv) Seats are reserved for candidates belonging to SC/ST category as per rules and these students are given special consideration for admission. However, they are also required to qualify at the test/interview as per the relaxed academic norms prescribed for them.

(v) Candidates who have appeared/are going to appear at the qualifying examinations may also apply.

(vi) Forms may also be collected personally from the Institute's Academic Office on submitting the required demand draft on all working days from 10 a.m. to 12.30 p.m. and 2.30 p.m. to 5.30 p.m.

6. TEST/INTERVIEW

The final selection of admission to Ph.D./M.Tech./M.Des. will be based on performance at the test/interview to be conducted at the Institute and the GATE or equivalent Examination score. For the M.Sc. programmes the selection will be on the basis of performance in written tests.

Advt No. G-9/92-93

DEPUTY REGISTRAR (Academic)

Current Documentation in Education

A list of select articles culled from periodicals received in AIU Library during March 1992

EDUCATIONAL PHILOSOPHY

Davydov, V V and Zinchenko, V P. Culture, education, thought. **Prospects** 21(1), 1991, 9-16.

Klafki, Wolfgang. Can education science make a contribution to substantiating pedagogic aims? **Edn** 44, 1991, 35-45.

Lenhart, Volker and Eggers, Philipp. Sociology in the context of educational theory. **Edn** 44, 1991, 99-110.

Marotzki, Winfried. On the current relevance of Wilhelm Flitner's theory of education. **Edn** 44, 1991, 88-98.

Menze, Clemens. Educational humanism in the current discussion. **Edn** 44, 1991, 75-87.

Nunner-Winkler, Gertrud. Adolescence and identity as an educational problem. **Edn** 44, 1991, 18-34.

Rumpf, Horst. Insights cannot be transmitted in the same way as information. **Edn** 44, 1991, 46-58.

Schelten, Andreas. Theory of education whilst at work: Its basic features and present-day problems. **Edn** 44, 1991, 7-17.

EDUCATIONAL PSYCHOLOGY

Volet, Simone E. Modelling and coaching of relevant metacognitive strategies for enhancing university students' learning. **Learning and Instruction** 1(4), 1991, 319-36.

EDUCATIONAL SOCIOLOGY

Debi, Sailabala. Education and economic development of tribals in an urban setting. **J of Ednl Planning and Admn** 4(4), 1990, 65- 70.

Lipset, Seymour Martin. Political correctness, historically speaking. **Ednl Record** Winter, 1992, 5-11.

Mathew, A. Perspectives on inequities in education: Lessons to learn. **J of Ednl Planning and Admn** 4(2), 1990, 61-83.

EDUCATIONAL PLANNING

Bharadwaj, Shyama. Education policy: An analysis. **J of Ednl Planning and Admn** 4(2), 1990, 35-47.

Chinapah, Vinayagum. Educational planning, administration and management in Africa. **Prospects** 21(1), 1991, 27-42.

Fagerlind, Ingemar and Sjostedt, Britt. Educational planning and management in Europe. **Prospects** 21(1), 1991, 83-96.

Gennaoui, Antoine M. Review and prospects of educational planning and management in the Arab States. **Prospects** 21(1), 1991, 51-68.

EDUCATIONAL ADMINISTRATION

Bacchus, M K. Decentralization of education in the context of small nation states. **J of Ednl Planning and Admn** 4(2), 1990, 1- 10.

BRIDGEPORT FUTURES initiative: A partnership on behalf of youth. **Industry & Hr Edn** 5(4), 1991, 233-7.

Gamage, D Thenuwara. Colonial impact and the university administration in diverse cultures. **J of Ednl Planning and Admn** 4(2), 1990, 11-33.

Lamdin, Lois. Support and recognition for workplace learning: A US perspective. **Industry & Hr Edn** 5(4), 1991, 201-8.

Ray, Bharati and Sanyal, Dipti. Asutosh Mookerjee and the making of Calcutta University. **IASSI Q** 10(1), 1991, 107-26.

Romagnoli, Gain Cesare. Italian industry and universities: The search for cooperation. **Industry & Hr Edn** 5(4), 1991, 216-22.

Schmidt, Benno. University and freedom. **Ednl Record** Winter 1992, 14-8.

Thompson, Dennis F. Ethical fundraising: An educational process. **Ednl Record** Winter 1992, 38-43.

TEACHERS & TEACHING

Gamson, Zelda F. Brief history of the seven principles for good practice in undergraduate education. **New Directions for Teaching and Learning** 47, 1991, 5-12.

EDUCATIONAL TECHNOLOGY

Cheng, Hui-Chuan and others. Comparison of performance and attitude in traditional and computer conferencing classes. **American J of Distance Edn** 5(3), 1991, 51-64.

Gehlauf, DeeAnn N and others. Faculty perceptions of interactive television instructional strategies: Implications for training. **American J of Distance Edn** 5(3), 1991, 20-8.

Moore, D Michael and others. Role of facilitators in Virginia's electronic classroom project. **American J of Distance Edn** 5(3), 1991, 29-39.

ECONOMICS OF EDUCATION

Klees, Steven J. Economics of education: Is that all there is? **Comp Edn Rev** 35(4), 1991, 721-34.

Sahoo, P K. Private costs of post graduate students of Himachal Pradesh University. **J of Ednl Planning and Admn** 4(3), 1990, 49- 57.

Willett, John B and Singer, Judith D. From whether to when: New methods for studying student dropout and teacher attrition. **Rev of Ednl Research** 61(4), 1991, 407-50.

VOCATIONAL EDUCATION

Simon, Helen H. Medical education: Does it serve the purpose? **Yojana** 36(1&2), 1992, 16-23.

SPECIAL EDUCATION

Jangira, N K. Technology in education and rehabilitation of the disabled. **J of Ednl Planning and Admn** 4(2), 1990, 91-8.

ADULT EDUCATION

Hamadache, Ali. Non-formal education: A definition of the concept and some examples. **Prospects** 21(1), 1991, 111-24.

Tuijnman, Albert. Emerging systems of recurrent education. **Prospect** 21(1), 1991, 17-24.

Ushadevi, M D and Nagaraju, C S. Education and structural status-quo: A case study of Karnataka. **J of Ednl Planning and Admn** 4(2), 1990, 85-90.

DISTANCE EDUCATION

Phelps, Ruth H and others. Effectiveness and costs of distance education using computer-mediated communication. **American J of Distance Edn** 5(3), 1991, 7-19.

Pierre, Suzanne and Olsen, Larry K. Student perspectives on the effectiveness of correspondence instruction. **American J of Distance Edn.** 5(3), 1991, 65-71.

COMPARATIVE EDUCATION & COUNTRY STUDIES

Sahoo, P K. Development of higher education in India: Present and future. **J of Ednl Planning and Admn** 4(2), 1990, 49-60.

Snook, Ivan. Policy change in higher educaton: The New Zealand experience. **Hr Edn** 21(4), 1991, 621-34.

THESES OF THE MONTH

A list of Doctoral Theses accepted by Indian Universities

BIOLOGICAL SCIENCES

Environmental Sciences

1. Jagadeesh, E P. **Studies on speciation of some heavy metals in an aquatic environment.** JNU. Dr D K Banerjee.

2. Sahu, Satyabrata. **Studies on complexation of some trace heavy metals with humic and fulvic acids in natural water systems.** JNU. Dr D K Banerjee.

3. Sharma, Archana. **Physico-chemical characteristics of treated, Bhilai Steel Plant effluent and its effect on plants.** Ravishankar. Dr M L Naik, Reader, School of Studies in Bioscience, Ravishankar University, Raipur.

Biology

1. Ghosh, Paromita. **Studies on thermophilic streptomyces in relation to their organisational and biochemical characteristics.** Ravishankar. Dr Vibhuti Rai, Reader, School of Studies in Bioscience, Ravishankar University, Raipur.

2. Krishna Pillai, V Kunju. **Studies on the hydrobiology and pollution in the Vembanad lake and adjacent waters.** CUST. Dr P V Ramachandran Nair.

3. Lal, Kuldeep Kumar. **Studies on the reproductive physiology of Lates calcarifer Bloch.** CUST. Dr P S B R James, Director, Central Marine Fisheries Research Institute, Kochi.

4. Muraleedharan, G. **Studies on wave climate along the South West Coast of India.** CUST. Dr P G Kurup, Prof and Head, Physical Oceanography and Meteorology Division, School of Marine Sciences, Cochin University of Science and Technology, Kochi.

Biophysics

1. Maiti, Subhankar. **Biophysical studies of interactions with DNA of some antitumour and other drugs.** Calcutta.

Biochemistry

1. Haridy, Abd El-Moneim Aly Hassanien. **Effect of neonatal protein calorie undernutrition on developing skeletal muscle in the rat.** JNU. Prof Shobha Goyle.

2. Mangat, Harleen. **Gene expression and calcium-activated neutral protease synthesis in Duchenne muscular dystrophy: Some evidences.** Osmania.

3. Nakhai, Bita. **Studies on expression of gonadotropin genes in insect cells using baculovirus expression vector system.** JNU. Dr Sayed E Hasnain.

4. Renu Kumari. **Effect of steroids on growth and bio-chemical parameters of Triticum aestivum L and Zea mays L.** GNDU.

5. Roy, Birendra Kumar. **Effect of pyrogen induced fever on the biokinetics of cefazolin and its interaction with probenecid in goats.** Birsa Agri.

6. Singh, Kushal Pal. **Studies on heat shock proteins of rice.** JNU. Prof K C Upadhyaya.

7. Sujatha, J. **Studies on the N-methyl-N-nitra-N-nitrosoguanidine induced metabolic and neoplastic changes in the gastrointestinal tract and the protective effect of Jeevanya, a herbomineral Indian preparation.** Madras.

8. Venkataprasad, N. **Immunological functions of alveolar macrophages in pulmonary tuberculosis.** Madras.

Biotechnology

1. Sharma, Ajay Kumar. **Biological control agents for insect vectors - Molecular and physiological studies of mosquito larvicidal bacterium Bacillus thuringiensis subsp. israelensis strain 4Q6.** Anna. Dr Kunthala Jayaraman, Director, Centre for Bio-Technology, Alagappa College of Technology, Madras.

Botany

1. Barot, Sunil Maganlal. **Tissue culture studies with Plantago ovata Forsk and Trachyspermum ammi (L) Sprague.** Baroda.

2. Behera, Yashobanta Narayan. **Chloroplast degradation in fern leaves during senescence.** Sambalpur. Dr (Mrs) Basanti Biswal, Lecturer, Department of Life Science, Sambalpur University, Jyoti Vihar, Burla.

3. Chakrabarti, Amitabha. **Studies on some events associated with cell division in plants.** Calcutta.

4. Devinder Singh. **Phosphorus nutrition in relation to radiant use efficiency and C-N balance in lentil, Lens culinaris Medic.** PAU.

5. Firdousi, Shakeel Ahmed. **Studies on the fungal diseases of some important forest plants, with special reference to the foliage diseases.** H S Gour. Prof K M Vyas, Department of Botany, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

6. Hanumantha Rao, Gundimeda. **Intergeneric hybridization between the cultivated species of Brassica and the wild taxa Enarthrocarpus and Sinapis.** Delhi.

7. Haran, Iyer K R Pranatharthi. **Studies in the nectaries of some Cucurbitaceae.** Patel. Prof J A Inamdar.

8. Ishwar Singh. **Studies on causes and regulation of leaf and flower shedding in pigeonpea,** Cajanus cajan(L) **Millsp.** HAU.

9. Jayaraman, P. **Storage fungi and aflatoxin B1 in rice and rice bran, with special reference to parboiling and milling.** Madras.

10. John, S Ahmed. **Mutation studies in blackgram, Vigna mungo (L.) Hepper.** Bharathidasan. Dr G R Rao, Prof and Head, Department of Botany, Bharathidasan University, Tiruchy.

11. John, Sheeja Mary. **Chemical and taxonomic studies of the Malvaceae and allied taxa.** Baroda.

12. Mahmooduzzafar. **Air pollution influence on morphology and growth of** Cassia sophera L **and** Sida rhombifolia L. AMU. Prof Mohd Iqbal.

13. Manna, Bandana. **Taxonomic revision of some members of polyporaceae.** Visva-Bharati. Dr (Mrs) Anjali Roy, Department of Botany, Visva-Bharati, Santiniketan.

14. Mathew, K T. **Taxonomic studies on the flora of the Palni (Pulney) hills, Tamil Nadu - II.** Bharathidasan. Dr K M Mathew, Director, The Rapinat Herbarium, St. Joseph's College, Trichy.

15. Mishra, Chakra Pani. **Effect of cement dust pollution to crop ecosystem.** Magadh. Dr D D Pandey, Department of Botany, S P M College, Udantpuri, Biharsharif.

16. Mohan, V. **Studies on ectomycorrhizal association in Pinus patula Schlecht and Cham. plantations in the Nilgiri Hills, Tamil Nadu.** Madras.

17. Murugaiyan, P. **Studies on the seedling anatomy of some**

hypogeal angiosperms. Bharathidasan. Dr K Periasamy, D-97, 9th Cross, Thillainagar, Trichy.

18. Nivsarkar, Manish. **Biochemical mechanism behind the phototoxicity of alfa-ter-thienyl: Its use as a mosquito control agent.** Devi Ahilya. Dr M M Lalriya, Vice Chancellor, Ravishankar University, Raipur.

19. Rejani, A. **Taxonomy of Cyperacene of Kerala.** Calicut. Dr V V Sivarajan, Department of Botany, University of Calicut, Calicut.

20. Sarabhai, Archana. **Effect of enhanced levels of carbon dioxide on primary productivity.** JNU. Prof C K Varshney.

21. Sareen, Sindhu. **Mutation studies in** Plantago ovata **Forsk.** Jammu. Dr A K Koul and Dr B L Koul.

22. Sarup, Vinita. **Hybridization between the cultivated** Brassicas **and their two wild relatives,** Diplotaxis and Erucastrum. Delhi.

23. Satheesh, R. **Aerobiological and some biochemical studies of pollen grains and fungal spores of Kodaikanal and Tiruchirapalli with reference to respiratory allergy.** Bharathidasan. Dr G R Rao, Prof and Head, Department of Botany, Bharathidasan University, Tiruchi.

24. Sawantsar, Swati. **The floristics and biological spectrum of Jhabua District, M P with notes on ethnobotany.** Devi Ahilya. Dr V B Diwanji, 35, Vishnupuri Main, Indore.

25. Senthil Kumar, T. **A floristic and phytogeographic analysis of the vegetation of Shervaroy hills, Eastern Ghats.** Bharathidasan. Dr K V Krishnamurthy, Prof, Department of Life Sciences, Bharathidasan University, Tiruchy.

26. Shrivastava, Karuna. **Composition and significance of microbial spores in the air at Jabalpur.** Durgawati. Dr (Smt.) Karuna S Verma, Department of Bio-Science, Rani Durgawati Vishwavidyalaya, Jabalpur.

27. Siddiqui, Mohd Riyazul Haque. **Efect of pre soaking seed treatments on growth development and yield components of paddy,** Oryza sativa **L. under rainfed cultivation.** Ravishankar. Dr M L Sonar, Govt Science College, Raipur.

28. Sobita Devi, Thiyam. **Karyosystematic survey of different bamboo species of Manipur.** Manipur. Dr G J Sharma, Assoc Prof, Department of Life Sciences, Manipur University, Imphal.

29. Tomar, Surendra Singh. **Response of summer moong to phosphorus levels, moisture regimes and plant densities.** Jiwaji. Dr A K Jain, Reader, School of Studies in Botany, Jiwaji University, Gwalior and Dr S S Bhadouria, Assoc Prof, College of Agriculture, Gwalior.

30. Upadhyay, Vijay Bahadur. **Influence of nitrogen levels, seed rates and mulches on growth and yield parameters of wheat,** Triticum aestivum **L. varieties under late sown conditions.** Durgawati. Dr J P Tiwari, Department of Agronomy, Jawaharlal Nehru Krishi Vishwavidyalaya, Jabalpur and Dr S K Hasija, Prof and Head, Department of Bio-Science, Rani Durgawati Vishwavidyalaya, Jabalpur.

Agriculture

1. Chakrabarti, Parthapratim. **Seasonal effect on the forms of nitrogen and sulphur along with microbial population in some selected localities of coastal saline soils of West Bengal, Sundarban Regions.** Calcutta.

2. Delvadia, Dahyalal Vashram. **Effect of growth regulators and boron on growth, yield and quality of chiku,** Achras sapota L. Marathwada Krishi. Dr V R Chakrawar, Head, Department of Horticulture, Marathwada Agricultural University, Parbhani.

3. Jagtar Singh. **Effect of growth regulators on maturity ripening and post harvest physiology of ber,** Zizyphus mauritiana Lamk. GNDU.

4. Kushal Raj. **Epidemiology and control of seed and head rot of sunflower.** HAU.

5. Paramjit Singh. **Evaluation of open-pollinated seedlings of guava for flowering and fruiting characters.** PAU.

6. Patil, Vishnu Kashiram. **Line x tester analysis of quantitative characters and storage quality of onion.** M P Krishi. Dr P N Kale.

7. Singh, Ram Lakhar. **Impact of Dudhwa National Park on the ecology of the people and wildlife of the area.** Ghasidas. Dr D N Tewari, Director General, Indian Council of Forest Research Institute, Dehradun.

Zoology

1. Bhattacharyya, Uma. **Study on the effect of cyanocobalamin on brain of singi fish,** Heteropneustes fossilis **Bloch.** Calcutta.

2. Das, Jharna Rani. **Role of glutamate dehydrogenase in ammonia management in a freshwater air-breathing teleost,** Heteropneustes fossilis. NEHU. Dr B K Ratha, Department of Zoology, North Eastern Hill University, Shillong.

3. Dixit, Anil. **Effects of some antifertility drugs on the pituitary, gonad and adrenals of male five striped palm squirrel,** Funambulus pennanti **Wroughton.** Devi Ahilya. Dr Rampal Singh, Prof, Department of Zoology, Holkar Science College, Indore.

4. Guha, Devasis. **Identification and characterisation of temperature sensitive paralytic mutations on the autosomes of** Drosophilla melanogaster. GNDU.

5. Gupta, Gopa. **Interrelationship of the insulin receptor and neurotransmitters in brain.** JNU. Dr (Mrs) N Z Baquer, Prof, School of Life Sciences, Jawaharlal Nehru University, Delhi.

6. Gurusubramanian, G. **Bioecology of some anthophilous thrips and their pollination potential (Insecta: Thysanoptera).** Madras.

7. Hardenia, Archana. **Studies on lectin-cell interaction.** H S Gour. Dr B K Shrivastava, Department of Zoology and Dr P K Shrivastava, Department of Anthropology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

8. Hemalatha, N J. **Evaluation of growth and metabolic responses of certain fish under dietary regimes of select rural wastes.** Osmania.

9. Kasturi Bai, R S. **A contemporary study of two tropical lentic systems in the context of aquaculture.** Madras.

10. Kinathi, Sheela. **Studies on gall forming mites of Northern Kerala.** Calicut. Dr M A Haq, Department of Zoology, University of Calicut, Calicut.

11. Langer, Seema. **Culture and some biological aspects of some important fish food organism.** Jammu. Prof Y R Malhotra.

12. Majumdar, Zahidur Rahman. **Biology of the water mites of Bengal.** Calcutta.

13. Medda, Chiranjib. **Variation of muscle protein and lipid of some fishes.** Visva-Bharati. Prof Biswanath Mitra, Department of Zoology, Visva-Bharati, Santiniketan.

14. Moitra, Jaideep. **Toxic response syndrome in** Channa punctatus **Bloch exposed to industrial pollutants: Hepatic profiles of reduced glutathione, glutathione S-transferase and cytochrome P-450/cytochrome P-448.** Visva-Bharati. Prof Shelley Bhatacharya, Department of Zoology, Visva-Bharati, Santiniketan and Dr A K Ray, Department of Zoology, Visva-Bharati, Santiniketan.

15. Morrison, M Noble. **Bioecological studies on two species of phytophagous mirids** Campyloneuropsis Sp., Campylomma lividicornic **Reutor and a predatory mirid,** Deracocoris indianus **Carvalho (Miridae: Hemiptera: Insecta).** Madras.

16. Nadhamuni Chetty, A. **The involvement of ctenidia and other tissues of freshwater mussel in detoxification mechanisms.** Venkateswara. Dr (Mrs) K Indira Sriram, Reader, Department of Zoology, Sri Venkateswara University, Tirupati.

17. Rahimunnisa. **Physiological and biochemical studies on some effects of gonadal steroids on the developing vertebrate brain.** Bangalore. Dr (Mrs) Nayeemunnisa, Prof, Department of Zoology, Bangalore University, Bangalore.

18. Saxena, Seema. **Protective action of some compounds against beryllium toxicity in mice.** Jiwaji. Dr R Mathur, Prof and Head, Department of Zoology, Jiwaji University, Gwalior.

19. Surekha, K. **Studies on the Eulophidae (Hymenoptera: Chalcidoidea) of Malabar, Kerala.** Calicut. Dr T C Narendran, Department of Zoology, University of Calicut, Calicut.

20. Venkataramaiah, J. **Studies on the effect of physical exercises on the female reproductive physiology of frog, Rana hexadactyla Lesson.** Venkateswara. Dr S Govindappa, Reader, Department of Zoology, Sri Venkateswara University, Tirupati.

21. Venkatramaiah, S. **Studies on the effects of phosalone on certain physiological processes of Tilapia mossambica Peters.** Venkateswara. Dr G Rajarami Reddy, Reader, Department of Zoology, Sri Venkateswara University, Tirupati.

22. Vijayagopal, K. **Comparative biology and ecology of red wattled lapwing, Vanellus indicus Boddaert and the yellow wattled lapwing, Vanellus malabaricus Boddaert and a preliminary comparative study of the vocalisation of certain species of Indian birds.** Calicut. Dr D N Mathew, Department of Zoology, University of Calicut, Calicut.

Medical Sciences

1. Bhattacharya, Mihir Kumar. **Evaluation of various drugs in the treatment of acute diarrhoeal diseases.** Calcutta.

2. Pal, Raman. **Studies on the biochemical mechanisms of cadmium neurotoxicity in adult rats exposed to alcohol.** PGI.

3. Rathna Prabha, D. **Evaluation of genotoxic potentials of two methyl furans from some cytogenetic parameters.** Osmania.

4. Sabhiya Majid. **A study to evaluate the effect of ellagic acid on some of the parameters involved in chemical carcinogenesis.** PGI.

5. Sunil Kumar, N. **Investigations on certain genetic, biochemical and immunological markers in insulin-dependent diabetes mellitus and non-insulin dependent diabetes mellitus.** Osmania.

6. Trivedi, Piyush. **Synthesis and biological evaluation of some Mannich bases.** Devi Ahilya. Dr S C Chaturvedi, Department of Pharmacy, Devi Ahilya Vishwavidyalaya, Indore.

Animal Husbandry

1. Doke, Vikas Sitaram. **Influence of digestible protein on growth and nutrient utilization in crossbred (Ffx Deoni) and buffalo calves.** Marathwada Krishi. Dr R B Sarode, Prof, Department of Animal Husbandry and Dairy Engineering, College of Agriculture, Marathwada Agricultural University, Parbhani.

2. Roy, Rohini Kumar. **Studies on the pharmacokinetics and toxicity of metronidazole in different animal species.** HAU.

VECTOR CONTROL RESEARCH CENTRE
(INDIAN COUNCIL OF MEDICAL RESEARCH)
PONDICHERRY
M.Sc. (Medical Entomology)
ADMISSION NOTICE -1992-93

Applications are invited for admission to the 2-year M.Sc. Course in Medical Entomology affiliated to the Pondicherry University. The Govt. of India has equated this course with M.Sc. Zoology/Entomology. Selection is based upon an entrance test. Students admitted under "Open Quota" category will be paid a monthly fellowship of Rs.800. The number of candidates to be admitted will be as follows:

Open Quota : 6 seats (1 reserved for SC/ST).

Nomination (State/Central Govt./National Laboratories): 3 seats.

WHO nomination (from outside India):3 seats. The Eligibility Certificate will have to be obtained from the Pondicherry University.

Basic qualification: B.Sc. with Zoology as one of the subjects or M.B.B.S. or B.V.Sc. or B.Sc. MLT.(I class for Open General;II class for SC/ST; class not insisted for nominated candidates, subject to their clearing the screening test).

Application form and Prospectus can be had from, "The Director, Vector Control Research Centre, Pondicherry-605006" on or before**15th June 1992** on payment of Rs.25/-(Rupees twenty five only) by a demand draft drawn in favour of the "Director,Vector Control Research Centre", payable at Pondicherry-605006. The last date for receipt of completed application form is **30th June 1992**. Entrance test will be held on **19th July 1992** at Pondicherry.

Dr. Vijai Dhanda
DIRECTOR

INDIAN INSTITUTE OF TECHNOLOGY : DELHI

HAUZ KHAS : NEW DELHI - 110016

NOTICE FOR ADMISSION TO M.Sc/M.Tech./Ph.D. PROGRAMMES 1992-93

Advt. No. IITD/PGS/1/92

Applications are invited for admission to the following Postgraduate programmes at IIT, Delhi, for the session commencing from July 1992. Detailed information is given in the Information Brochure which will be supplied along with the application form:

1. DOCTOR OF PHILOSOPHY (FULL-TIME SPONSORED AND PART-TIME)

(a) Departments/Centres Offering Ph.D Programmes

(i) ENGINEERING DEPARTMENTS

Applied Mechanics, Chemical Engineering, Civil Engineering, Computer Science and Engineering, Electrical Engineerng, Mechanical Engineering and Textile Technology.

(ii) SCIENCE DEPARTMENTS

Chemistry, Mathematics and Physics.

(iii) DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

(iv) INTERDISCIPLINARY CENTRES

Bio-Chemical Engineering Research Centre, Centre for Atmospheric Sciences, Centre for Biomedical Engineering, Centre for Energy Studies, Centre for Materials Science & Technology, Centre for Management Studies, Centre for Rural Development & Technology, Instrument Design & Development Centre, Industrial Tribology, Machine Dynamics & Maintenance Engineering Centre, Centre for Applied Research in Electronics.

(b) MINIMUM QUALIFICATIONS FOR ADMISSION

(i) Master's degree in Engineering/Technology/Sciences/Humanities in respective discipline or equivalent with a minimum GPA of 6.75 on a 10-point scale or equivalent (as determined by IITD) wherever letter grades are awarded or 60% aggregate marks, where marks are awarded.

(ii) In exceptional cases, candidates with B.Tech degree or equivalent with excellent record (GPA of 7.50 on a 10-point scale or 70% marks) will be considered eligible for admission provided they have qualified either GATE or any other national level examinations like UGC/CSIR.

(iii) For Ph.D. programme in Biomedical Engineering, candidates having an M.B.B.S. degree with 60% and above marks will also be considered eligible for admission.

(iv) Full-time scholars who do not possess an M.Tech degree in the relevant field or equivalent are required to have valid GATE score for Engineering/Technology/Science disciplines or are required to qualify in UGC/CSIR fellowship examination for Sciences/Humanities & Social Sciences disciplines.

RELAXATION

Relaxation in GPA to 6.25 or 55.00% marks in minimum Qualifying criteria may be permitted for SC/ST candidates, and those with MA degree in English for Ph.D. in English in the Deparment of Humanities & Social Sciences.

(c) SCHOLARSHIP FOR FULL-TIME STUDENTS

(i) Regular students with M.Sc/M.A./B.Tech or equivalent qualification with valid GATE score/UGC/CSIR fellowship award will be eligible for scholarship @ Rs.1800/- per month; and

(ii) Candidates with M.Tech./M.E. or equivalent degree will be eligible for scholarship @ Rs.2400/- per month as per rules of the Institute.

2. MASTER OF TECHNOLOGY (Full-Time, Sponsored and Part-Time)

(a) (i) Departments offering M.Tech. Programmes.

Applied Mechanics, Chemical Engineering, Chemistry, Civil Engineering, Computer Science & Engineering, Electrical Engineering, Humanities & Social Sciences, Mechanical Engineering, Mathematics, Physics and Textile Technology.

(ii) Interdisciplinary M.Tech. programmes:

Energy Studies, Industrial Tribology, & Maintenance Engineering, Management & Systems, Polymer Science & Technology and Optoelectronics & Optical Communication.

(b) MINIMUM QUALIFICATIONS FOR ADMISSION

(i) For Full-Time Candidates:

Cadidates must have Valid GATE score

(ii) For Sponsored and Part-time Candidates:

Bachelor's degree in Engineering/Technology or Master's degree in Sciences in the relevant field with GPA of 6.75 on a 10-point scale or equivalent (as determined by the IITD) wherever letter grades are awarded or 60,00/- aggregate marks where marks are awarded.

Only employees of Public Sector Undertakings/Govt. Organisations/Private Industries (approved by Faculty Board) with a minimum experience of two years as on 1st August, 92 and Defence Sponsored Officers are eligible.

RELAXATION

Relaxation in GPA to 6.25 or 55% marks in minimum qualifying criteria may be permitted for SC/ST candidates only.

(c) SCHOLARSHIP

Candidate must have a Valid GATE score for the award of Institute Scholarship @ Rs. 1800/-p.m.

3. MASTER OF SCIENCE

(a) M.Sc Programmes are offered by the Chemistry, Mathematics and Physics Departmentsof the Institute.

(b) MINIMUM QUALIFICATIONS

B.Sc. (Hons)/B.Sc./B.A. in relevant field with a GPA of 6.75 on 10-point scale or equivalent (as determined by IITD) wherever letter grades are awarded or 60% aggregate marks where marks are awarded.

Relaxation in GPA to 6.25 or in marks to 55% in the minimum eligibility criteria may be allowed to SC/ST candidates only.

(c) SCHOLARSHIP AND FREESHIP

Merit-cum-means Scholarship/Freeship are permissible to M.Sc. students as per Institute rules.

4. GENERAL INFORMATION

(a) 15% of the seats for SC and 7.5% for the ST candidates are reserved in all the aforesaid programmes.

(b) Three seats are reserved for Physically Handicapped persons for admission to M.Tech. and Ph.D. programmes together, on full time basis only.

(c) Candidates called for Ph.D. programmes will be paid to and fro second class railway fare by shortest route. However, this provision will not apply to sponsered and part-time candidates.

(d) Only employees of public sector undertakings or Government organisations or private industries (approved by Faculty Boards) with a minimum experience of two years as on Ist August, 92 and Defence sponsered officers are eligible as sponsered and part- time candidates.

(e) Sponsored candidates are required to submit sponsorship certificate from their employers stating that the candidate would be treated as on duty with his usual salary and allowances and that he will be fully relieved for the period of study.

(f) In case of part time candidates, their organisation should be situated within the distance of 50Km from the institute. Part time candidates are required to submit a No Objection Certificate from their employers stating that the candidate is permitted to pursue his studies on part time basis.

Applications unaccompanied by such certificates from the employer will not be entertained.

(g) Hostel accommodation will be available only to full-time students(except for those who are Delhi based) subject to availability.

HOW TO APPLY

Application form and Information Brochure can be obtained from the Asstt. Registrar (PGS) by sending application fee of Rs.25/- by a crossed Bank/Demand Draft drawn on STATE BANK OF INDIA in favour of IIT Delhi payable at SBI, IIT, New Delhi, alongwith a self addressed envelope (25cm x 11 cm) affixing postage stamps worth Rs.25.00 and superscribed **"Application for "Ph.D"/"M.Sc."** as the case may be. Application Forms can be had from the Counter (Room No.AD-236) against Bank Demand Draft for Rs.25/- drawn on STATE BANK OF INDIA only during working hours. THE NO. AND DATE OF THE BANK DRAFT SHOULD BE MENTIONED BY THE CANDIDATES AT THE APPROPRIATE COLUMN WHILE SUBSEQUENTLY SUBMITTING THE PRINTED APPLICATION FORM/TESTIMONIALS.

The completed applications should be sent by the candidates direct to the Asstt. Registrar(PGS), Indian Institute of Technology, Hauz Khas, New Delhi - 110016. Those who wish to apply for admission to more than one Department/Interdisciplinary Centre or Programme should make separate application with prescribed fee. The application form at the top with all enclosures placed below, should be secured together rightly with a tag before mailing.

INTERIM ENQUIRIES WILL NOT BE ENTERTAINED.

By Post	:	**18.05.1992**
At the Counter	:	**25.05.1992**
Last date for receipt of completed Application Forms	:	**25.05.1992**

ASSTT. REGISTRAR (PGS)

NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING

SRI AUROBINDO MARG, NEW DELHI-110016

NCERT invites applications for the following posts: Designation, number of vacancies, reservation, if any. Educational qualifications and experience in respective fields are indicated below:

1. **EDITOR**: One post (reserved for ST).

   i) A Master's degree from a recognised university. ii) 7 years' experience in a publishing house.

2. **ASSISTANT EDITOR (URDU)**: One post

   i) A degree with Urdu as one of the subjects. ii) 5 years' experience in a publishing house.

3. **PRODUCTION OFFICER**: One post (reserved for SC)

   i) A degree or a diploma in Printing Technology OR two years Postgraduate diploma in Book Publishing with specialisation in book production. ii) 7 years' experience in Printing/Production in a Publishing/Printing organisation.

4. **FILM PRODUCER**: One post (reserved for SC)

   i) A degree from a recognised university. ii) Diploma in Film Production. iii) Experience of having worked as Producer for short films.

5. **ASSISTANT ENGINEER**: One post

   i) Degree in Engineering or M.Sc. degree in Physics with Wireless Communication or Electronics as a special subject. ii) 3 years' experience in operation and maintenance of TV/Broadcasting studios in a responsible capacity.

6. **MAKE-UP ASSISTANT**: One post

   i) Matriculation or equivalent. ii) Diploma or Certificate with specialisation in Make-up.

7. **AUDIO-RADIO PRODUCER GR.III**: Two posts (one reserved for ST)

   i) A university degree. ii) 3 years' experience in research for writing radio scripts or collection of data and materials for writing books.

PAY SCALES: Rs.3000-5000 for Sr. No.4, Rs.3000-4500 for Sr. No.s 1 and 3, Rs.2200-4000 for Sr.Nos. 2 & 5, Rs.1400-2300 for Sr.Nos. 6 & 7.

AGE LIMIT: (As on 1.1.92) Below 40 years for Sr.Nos. 1, 3 & 4; Below 35 years for Sr. Nos. 2 & 5; Below 30 years for Sr.No. 7; Between 21 and 30 years for Sr.No. 6.

(a) Age concessions allowed for SC/St candidates as per Govt. of India instructions. No age limit for the employees of the Council. (b) The number of vacancies is liable to change. (c) The selected candidates can be appointed/posted in any of the establishments of the Council anywhere in India. (d) If a candidate is found to be of exceptional merit relaxation of qualifications, experience, age etc. may be given by the Selection Committee at its discretion. (e) Those employed in Govt./Autonomous organisations should send their applications through proper channel.

Additional information regarding qualifications etc. will be supplied with the application forms which can be obtained from the Secretary, RECRUITMENT NCERT III Section, Dr. Zakir Hussain Khand, 5th floor, Room No.8, Sri Aurobindo Marg, New Delhi, 110 016, by sending a self-addresed envelope (23cmx10cm) giving name of the post, serial number and advertisement number.

Completed applications along with attested copies of certificates of qualifications and experience etc. and a crossed Indian Postal Order for Rs.8/- (no fees for SC/ST candidates) in favour of Secretary, NCERT, should reach him by 11.5.1992. Applications received without prescribed fee and/or received after the closing date will not be entertained. (Advt. No. TR-7).

davp 780 (24) 91.

Ministry of Human Resource Development

(Deptt of Education)

MEAXICAN GOVERNMENT SCHOLARSHIPS, 1992-93

Applications on plain paper are invited from Indian nationals for the award of four scholarships offered by the Government of Mexico in the following subjects:-

1) Mexican and Latin American Studies; 2) Pre-Colombian Studies; 3) Spanish Language and Literature; 4) Sciences (Physics, Mathematics and 5) Agricultural Sciences;a) Plant Breeding b) Plant Physiology c) Bio-Chemistry d) Agronomy e) Molecular Genetics f) Soil Microbiology g) Entomology; and h) Dairy Science.

DURATION: Initially 4 months and can be extended for one more year in suitable case.

VALUE: The scholarships will consist of a monthly allowance of Mexican Pesos1,399,650/- which will be paid according to academic background, Life Insurance and Insurance against accident, Medical attention, Inscription charges and fees.

PASSAGE COST: The cost of passage from Mexico to India will not be borne by the Mexican authorities. Travel expenses will be borne by the candidates or his/her Sponsors/Employers. Subject to availability of funds, the passage cost may be met by the Government of India provided the candidate is eligible under the rules.

AGE LIMIT: 33 years as on 1.4.1992, relaxable upto 2 years in upper age for SC/ST candidates.

ESSENTIAL QUALIFICATIONS: Uniformly good academic record with 60% marks or more at Master's degree level in the subject chosen, with two years research experience or a Ph.D. degree after obtaining prescribed qualifications.

SPANISH LANGUAGE: BASIC KNOWLEDGE OF SPANISH-LANGUAGE IS AN ESSENTIAL QUALIFICATION.

NOTE: 1. Only candidates who secured 60% marks or more at the prescribed qualification level are eligible. Where grades are mentioned, candidates must indicate the conversion formula adopted by the University/Institution and should give equivalent percentage of marks. 2. Equivalent foreign degrees will be considered. 3. Candidates who have already been abroad for study/ training/specialisation/research either on a scholarship or on their own, are eligible to apply only if they have been in India for atleast 3 consecutive years after their return from abroad. Applications of candidates who are abroad will not be considered. 4. Upper age limit and experience can be relaxed by not more than three months at the discretion of Selection Committee in the case of brilliant candidates. 5. Candidates having knowledge of donor country's language will be given preference. 6. Candidates should have sufficient knowledge of geographical situation, culture and heritage of India and Mexico. 7. Employed persons must send their applications through their employers with "NO OBJECTION CERTIFICATE" in time, failing which application will not be considered. However, advance applications will be considered provisionally pending sponsorship by employers. 8. Applications in subject field other than those specified above will not be considered. 9. Candidates who do not possess the requisite qualifications need not apply. 10. Master's degree means M.A./M.Sc./M.Tech./M.E. but not M.Phil. or Pre-Ph.D. 11. Photostat or attested copies of mark sheets and testimonials in support of age, qualifications experience etc. should invariably be attached with the application. Candidates should apply for the above scholarships on a plain paper with a recent passport size photograph, furnishing the following details, particulars to the **Secretary, Deptt. of Education, Ministry of Human Resource Development, ES.3 Section, A.1/W.3 Curzon Road Barracks, K.G. Marg, New Delhi-110 001 by 27th April, 1992.** The applications received late will not be entertained.

FORMAT

Photo

1. Name of the Scholarships Scheme: Mexican Govt Scholarships, 1992-93
2. Subject (Write any of the subjects given in the advertisement)
3. Name of the Candidates (in Block letters)
4. Full mailing address: (a) Present: (b) Permanent
5. Nationality
6. Father's Name
7. Date of birth, Age in years and state to which the candidate belongs:
8. Whether a member of SC/ST
9. Academic record starting from high school/higher secondary.

Name of University/ Board/ Institution	Examination(s) passed	Year of passing	Division class with position, if any. Otherwise equivalent class/ Division may be given alongwith the grades	%age of marks obtained & Position, if any. Otherwise equivalent %age may be given	Subjects taken

(NOTE: Where there is no Division/Class is awarded and only Grading done, the conversion formula adopted may be given)

10. Details of Professional/Practical: Training and Research Experience specifying the period and number of papers published, previous employment with name and date of employment, if any.
11. Have you basic knowledge of Spanish language? If so, attach documentary evidence:
12. Nature of the present employment: with date of appointment, designation and the name and address of the employers.
13. Have you been abroad? If so, give full particulars of the country and the period. Also, mention the year and month of return of India.
14. Proposed programme of study/research/training, specifying: i) the work at present engaged in: ii) nature and programme of study/research desired; iii) future plans/prospects after the proposed studies/research; and iv) how are these related to the technical or economical development of India?

Signature of the candidate

Place:

Date:

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A.I.U. PUBLICATIONS

No.	Title	Rs.
1.	Universities Handbook	1000.00
2.	Equivalence of Foreign Degrees	180.00
3.	Handbook of Engineering Education	In Progress
4.	Handbook of Medical Education-1990	50.00
5.	Handbook of Management Education-1989	30.00
6.	Handbook of Agricultural Education-1986	40.00
7.	Handbook of Distance Education	In Progress
8.	Scholarships for Study Abroad and at Home	10.00
9.	Directory of Distance Education Institutions – Part I: India	225.00
10.	Directory of Distance Education Insitutions – Part II : Pakistan & Srilanka	
11.	Association of Indian Universities-1925-75	50.00
12.	Association of Indian Universities-1925-85	100.00
13.	New Technologies in Higher Education (HB)	120.00
	(PB)	80.00
14.	Decentralisation of Higher Education System	100.00
15.	Graduate Unemployment in India	150.00
16.	Higher Education in India: Retrospect and Prospect	250.00
17.	Studies in Distance Education	20.00
18.	Directory of Women's Studies in India	120.00
19.	Universities and Research	45.00
20.	University Finance - A Statistical Profile II	75.00
21.	State Funding of Universities	50.00
22.	Elite in the Making	40.00
23.	Economics of College Education – A Study of Hindu College, Delhi	25.00
24.	Educational Statistics at a Glance	75.00
25.	Education and Economic Development	23.00
26.	Report of the Task Force on Autonomous Colleges and Departments	60.00

BIBLIOGRAPHY OF DOCTORAL DISSERTATIONS

No.	Title	Rs.
27.	Social Sciences 1857-1970	50.00
28.	Humanities 1857-1970	100.00
29.	Physical Sciences 1857-1970	125.00
30.	Biological Sciences 1857-1970	100.00
31.	Physical Sciences-1970-75	120.00
32.	Biological Sciences-1970-75	120.00
33.	Social Sciences & Humanities -1975-76	50.00
34.	Natural & Applied Sciences -1975-76	90.00
35.	Natural & Applied Sciences-1976-77	120.00
36.	Natural & Applied Sciences-1977-78	100.00
37.	Natural & Applied Sciences-1978-79	125.00
38.	Natural & Applied Sciences-1979-80	130.00
39.	Social Sciences & Humanities-1980-81	120.00
40.	Natural & Applied Sciences-1980-81	180.00
41.	Social Sciences & Humanities-1981-82	150.00
42.	Natural & Applied Sciences-1981-82	225.00
43.	Social Sciences & Humanities-1982-83	160.00
44.	Natural & Applied Sciences-1982-83	250.00
45.	Social Sciences & Humanities-1983-84	180.00
46.	Natural & Applied Sciences-1983-84	320.00
47.	Social Sciences & Humanities-1984-85	200.00
48.	Natural & Applied Sciences-1984-85	320.00
49.	Social Sciences & Humanities-1985-86	200.00
50.	Natural & Applied Sciences-1985-86	320.00
51.	Social Sciences & Humanities-1986-87	245.00
52.	Natural & Applied Sciences-1986-87	325.00
53.	Social Sciences & Humanities – 1987-88	340.00
54.	Natural & Applied Sciences – 1987-88	In Press

ON EXAMINATIONS

No.	Title	Rs.
55.	Unfair Means in University Examinations-A Study	50.00
56.	Computer in Examinations (Why & How)	65.00
57.	Scaling Techniques : What, Why & How	75.00
58.	Conduct of Examinations	35.00
59.	Towards Better Questions	30.00
60.	Monograph on Grading	15.00
61.	Monograph on Question Banking	14.00
62.	Monograph on Internal Assessment	10.00
63.	Monograph on Test & Item Analysis	17.00
64.	Monograph on Question Banking in English Language & Literature	10.00
65.	Monograph on Practical Examinations	30.00
66.	Monograph on Semester System	20.00
67.	Research Abstracts-Part I, II & III Each	6.00
68.	Research Abstracts-Part IV	14.00
69.	Monograph on Sample Free Item Analysis	50.00
70.	Monograph on Moderation of Examination Results	8.00
71.	Monograph on Syllabus Analysis and Restructuring	10.00
72.	Monograph on Revaluation of Answer Scripts	12.00
73.	Assessing Non Scholastic Aspects of Learners Behaviour	14.00

STATUS REPORTS ON

No.	Title	Rs.
74.	Grading in Universities	35.00
75.	Question Banking in Universities	25.00
76.	Internal Assessment in Universities	30.00
77.	Internal Management in Universities	30.00
78.	Preparations made by Universities to Receive 10+2 Input	30.00

QUESTION BANK BOOK SERIES

Undergraduate Level (English Script)

No.	Title	Rs.
79.	Mathematics	120.00
80.	Physics	In Press
81.	Chemistry	136.00
82.	Zoology	50.00
83.	Botany	75.00
84.	History	45.00
85.	Geography	In Press
86.	Psychology	55.00
87.	Economics	75.00
88.	Commerce	45.00
89.	Political Science	60.00
90.	Foods & Nutrition	25.00
91.	Sociology	In Press
92.	English Language & Literature	30.00
93.	Physiology	45.00
94.	Pharmacology	In Press
95.	Automobile Engineering	35.00
96.	Law of Contracts	45.00
97.	Anatomy	60.00
98.	Constitutional Law	35.00
99.	Electrical Power System	75.00
100.	Agronomy	100.00
101.	Zoology (Hindi Script)	100.00
102.	Chemistry (Hindi Script)	160.00
103.	History (Hindi Script)	70.00
	Postgraduate Level	
104.	Mathematics	85.00

SPORTS & PHYSICAL EDUCATION

No.	Title	Rs.
105.	Physical Fitness & Sports Standards in Universities	50.00
106.	Handbook of Rules & Regulations for Inter-University Tournaments	20.00
107.	Gymnastic Exercises for Men & Women	In Press

BOOKS ALSO AVAILABLE WITH LEADING BOOKSELLERS IN THE COUNTRY

Address Enquiries to :

Deputy Secretary (Publications)

Association of Indian Universities

AIU House, 16 Kotla Marg, New Delhi - 110 002

Telephones : 3310059, 3312429, 3313390, 3312305

Telex : 31-66180 AIU IN GRAM : ASINDU

Classified Advertisement

RAJASTHAN AGRICULTURAL UNIVERSITY

BIKANER

Applications on prescribed form are invited for recruitment to undernoted posts in the University. Application form can be obtained from the Registrar, Rajasthan Agricultural University, Bikaner - 334001, on a written request. All such requests must be accompanies by an Indian Postal Order for Rs. 10/- (Payable to the Comptroller, Rajasthan Agricultural University, Bikaner) and a self addressed envelope (size 27x12 cms) bearing postage stamps worth Rs.9. Completed application form along with attested copies of certificates in support of qualifications, experience, age etc. **must reach the Registrar at the above address on or before 25.04.92.**

Such of the candidates as have applied for the post(s) mentioned in this advertisement in response to the previous Advt. No.7/90 and 8/90 of this University and for which interviews have not been held (marked*) will have to apply afresh on prescribed form. They can obtain application form FREE OF COST from this office on written request, for which they should send a selfaddressed envelope of 27x12cms size bearing postage worth rupees 9. However, such of the candidates as have applied in response to Advt No. 3/91 of this University Need Not Apply Again.

FACULTY OF AGRICULTURE **VACANCIES**

PROFESSOR :Pay Scale Rs. 4500-150-5700-200-7300

		Total	Gen	SC +	ST +
1.	Agronomy (Research)	1	-	1	-
2.	Plant Breeding & Genetics (Research)	1	-	1	-
*3.	Agriculture Economics (Teaching)	1	1	-	-
*4.	Extention Education	2	1	1	-
5.	Plant Physiology (Research)	1	1	-	-
*6.	Agricultural Statistics (Teaching)	1	1	-	-
*7.	Entomology (Research)	1	1	-	-

ASSOCIATE PROFESSOR: Pay Scale Rs. 3700-125-4950-150 5700

		Total	Gen	SC +	ST +
1.	Agronomy (Research)	1	1	-	-
2.	Plant Breeding & Generics (Research)	1	1	-	-
*3.	Extension Education	2	1	1	-
*4.	Agricultural Statistics (Research)	1	1	-	-
*5.	Agroforesty (Research)	2	1	1	-
*6.	Agrostology (Research)	1	1	-	-
*7.	Horticulture (Research)	6	4	1	1
*8.	Nematology(Research)	1	1	-	-
*9.	Soil Science & Agril Chemis (Teaching & 2 Research)	3	2	1	-
*10.	Bio-Cehmistry(Research)	1	1	-	-
*11.	Limnology & Fisheries (1 Teaching 1 Research)	2	1	1	-
*12.	Plant Pathology	1	1	-	-

ASSISTANT PROFESSOR: Pay Scale Rs. 2200-75-2800-100-4000

		Total	Gen	SC +	ST +
1.	Agromony (Research)	16	8	5	3
*2.	Plant Breeding & Generics (2 Teaching & 17 Research)	19	13	4	2
*3.	Entomology (8 Research & 1 Teaching)	9	6	2	1
*4.	Agricultural,Economics (Research)	2	1	1	-
*5.	Agro-Meteriology (Research)	1	1	-	-
*6.	Animal Production (2 Research & 6 Extension)	8	5	2	1
*7.	Horticulture (6 Extension (5 Research & 1 Teaching)	12	8	2	2
*8.	Extension Education	7	4	2	1
*9.	Plant Pathology (1 Teaching, 8 Research & 1 Extension)	10	7	2	1
*10.	Nematology (Research)	3	2	1	-
*11.	Bio-Chemistry(Teaching)	1	1	-	-
*12.	Soil Science & Agril. Chemistry (3 Research & 1 Teaching)	4	2	1	1
*13.	Agrostology (Research)	4	2	1	1
*14.	Limnology & Fisheries (Research)	2	1	1	-
15.	Plant Physiology (1 Teaching & 1 Research)	2	1	1	-
16.	Agricultural Statistics (Research)	1	1	-	-

FACULTY OF DAIRY SCIENCE

PROFESSOR: Pay Scale: Rs. 4500-150-5700-7300

		Total	Gen	SC +	ST +
*1.	Dairy Science	1	1	-	-

ASSOCIATE PROFESSOR:Pay Scale: Rs. 3700-125-4950-150-5700

		Total	Gen	SC +	ST +
*1.	Dairy Chemistry (Teaching)	1	1	-	-
*2.	Dairy Technology (Teaching)	1	1	-	-

ASSISTANT PROFESSOR: Pay Scale Rs.2200-75-2800-100-4000

		Total	Gen	SC +	ST +
*1.	Dairy Accountancy & Business Management (Teaching)	1	1	-	-

*2.	Dairy Chemistry (Teaching)	2	1	1	-
*3.	Dairy Technology (Teaching)	1	1	-	-

FACULTY OF HOME SCIENCE

PROFESSOR: Pay Scale Rs. 4500-150--5700-200-7300

1.	Home Science Extension Education	1	1	-	-

ASSOCIATE PROFESSOR : Pay Scale : Rs. 3700-125-4950-150-5700

*1.	Hotel Management (Teaching)	1	1	-	-
*2.	Clothing & Textiles (Teaching)	2	1	1	-
3.	Foods & Nutrition (Teaching)	1	1	-	-

ASSISTANT PROFESSOR : Pay Scale: Rs. 2200-75-2800-100-4000

*1.	Clothing & Textiles (Teaching)	2	1	1	-
*2.	Foods & Nutrition (Teaching)	1	1	-	-
*3.	Child Development (Teaching)	1	1	-	-
*4.	Home Management (Teaching)	1	1	-	-

FACULTY OF AGRICULTURAL ENGINEERING

PROFESSOR: Pay Scale : Rs. 4500-150-5700-200-7300

1.	Agril. Processing & Food Engineering	1	1	-	-

ASSOCIATE PROFESSOR: Pay scale: Rs. 3700-125-4950-150-5700

*1.	Farm Machinery & Power Engg.(Research)	2	1	1	-
*2.	Mining Engineering (Teaching)	1	1	-	-
*3.	Electrical Engineering (Teaching)	1	1	-	-
*4.	Soil & Water Conservation Engg. (Research)	2	1	1	-
*5.	Civil Engineering (Teaching)	1	1	-	-

ASSISTANT PROFESSOR: Pay Scale:Rs.2200-75-2800-100-4000

*1.	Farm Machinery & Power Engg.	12	8	2	2
*2.	Soil & Water Conservation Engg.	7	4	2	1
*3.	Mining Engineering (Teaching)	1	1	-	-
*4.	Geology (Teaching)	1	1	-	-
*5.	Rural Sociology (Research)	1	1	-	-
*6.	Physics(Teaching)	5	3	1	1
*7.	Chemistry (Teaching)	2	1	1	-
*8.	Mathematics(Teaching)	2	1	1	-
*9.	English(Teaching)	1	1	-	-

FACULTY OF VETERINARY & ANIMAL SCIENCE

PROFESSOR: PAY SCALE : Rs.4500-150-5700-200-7300

*1.	Microbiology (TEACHING)	1	1	-	-
*2	Live-Stock Production & Management(Teaching)	1	1	-	-

ASSOCIATE PROFESSOR: Pay Scale : Rs.3700-125-4950-150-5700

*1.	Anatomy (Research)	1	1	-	-
*2.	Extension Education (Teaching)	1	1	-	-

ASSISTANT PROFESSOR :Pay scale: Rs.2200-75-2800-100-4000

*1.	Veterinary Pathology (Teaching)	1	1	-	-
*2.	Gynecology) (Teaching & Research	2	1	1	-
*3.	Surgery & Radiology) (Teaching)	1	1	-	-
*4.	Parasitology(Teaching)	1	1	-	-
*5.	Live-Stock Production & Management (Dairy Husbandry)	1	1	-	-
*6.	Animal Breeding & Genetics(Research)	1	1	-	-
*7.	Veterinary Physiology	1	1	-	-

OTHERS

*1.	Assistant Librarian (Pay Scale Rs. 2200-75-2800-100-4000)	3	2	1	-
*2.	Superintendent Physical Education (Pay Scale: Rs. 2200-75-2800-100-4000)	1	1	-	-
*3.	Assistant Engineer(Civil) (Pay Scale Rs. 2200-75-2800-100-4000)	1	1	-	-

+Subject to general suitability

*Post of Advt No.7/90 and 8/90 for which interview not held

GENERAL NOTE:

- Number of post(s) can be increased if more posts are created before recruitment is made maintaining roster system
- Higher start can be allowed for exceptionally qualified candidates performing well in interview
- Interviews for the post of Assistant Professor and equivalent shall be held after clearance from ICAR and/or or State Government
- University reserves the right not to fill up any or all post advertised.

MINISTRY OF HUMAN RESOURCE DEVELOPMENT

(ES 4 SECTION)

COMMONWEALTH SCHOLARSHIP PLAN NEWZEALAND AWARDS 1993

Applications on plain as per prescribed format are invited from Indian National for the above-mentioned Commonwealth Scholarships for higher studies/research in Newzealand.

1. NEWZEALAND : NUMBER OF SCHOLARSHIPS - THREE

SUBJECT FIELD: (a) SOIL SCIENCE. (b) DAIRY TECHNOLOGY. (c) GEO-THERMAL TECHNOLOGY. MINIMUM QUALIFICATIONS REQUIRED: A first class Master's Degree in the subject or allied Fields. (Applicant should have completed the relevant qualification within the last five years preceding the year of the application).

ESSENTIAL EXPERIENCE

Atleast 2 years' (a) teaching/research or practical experience on 31st December, 1991, after acquiring the qualifications prescribed above.

AGE: Below 35 years as on 1st August, 1992, (Preference will however be given to the candidates in the age group of 26-35 years). Relaxation will be given to the candidates belonging to SC/ST candidate other things being equal.

VALUE: (a) Travel to and from Newzealand by Air-passage as arranged by the authorities of the donor country (No provision has been included for the expenses of the dependants). (b) Expenditure on board and lodging books and other study material, tuition fee, internal travel related to the studies and Medical care will be met by the Newzealand Government.

N.B.: 1. Only candidates with 60% of marks and above at the above prescribed qualification are eligible. Where grades are mentioned the candidates must indicate the conversion formula adopted by the University/Institution and should also indicate equivalent percentage of marks. 2. Equivalent foreign degrees will be considered. 3. Each application must be accompanied by attested copies of (a) Certificate of age (b) Marks-sheet of the qualifying Examination (c) All degrees/diplomas/certificates. 4. Candidates who have already been abroad for study/training/specialisation either on scholarship or on their own for a period exceeding six months are eligible to apply only if they have been in India for at least three consecutive years after their return from abroad. 5. Applications in subject field other than those specified above will not be considered. 6. Applications of candidates who are abroad will not be considered. 7. Candidate must furnish a clear and precise programme of study/research (minimum 300 words). 8. Those who have already done Ph.D. in India or abroad need not apply. 9. Candidates who do not possess the requisite qualifications need not apply. 10. Candidates should have adequate knowledge of Geographical situation, cultural heritage of India and the Donor Country. 11. Documents submitted along with the applications will not be returned. Hence candidates are advised to send only the Photocopies of the Certificates, etc., duly attested. 12. Since these Scholarships are offered by Foreign Governments, applications should invariably be submitted in English only. 13. Experience has to be supported by documentary evidence. 14. Candidates who have applied more than twice and were not selected for nomination are not eligible to apply. 15. Employed candidates must send their applications through their employers with a 'No Objection Certificate'. They will not be called for interview unless the certificate is forwarded with the application. Application through proper channel should also reach this office by the last date fixed for the purpose. 16. Mere fulfilment of requirements as laid down in the advertisement does not qualify a candidate for interview. Interview letters in a particular subject are sent only to the best candidates in order of merit after their applications are judged by a duly constituted Selection Committee of Experts. 17. Applications received after the prescribed date and incomplete applications will not be entertained. 18. Canvassing in any form will be a disqualification. 19. The Selection Committee's decision about candidate for Interview or selecting a candidate for nomination will be final. NO REPRESENTATIONS IN THIS REGARD WILL BE ENTERTAINED.

LAST DATE : The candidates should apply for the above scholarship on plain paper (preferably typewritten) with a recent passport size photograph duly affixed, furnishing the details/particulars in the given format to the Under Secretary, External Scholarships Division (Section E.S. 4), Department of Education, A.I./W.3 Curzon Road Barracks, Kasturba Gandhi Marg, New Delhi 110 001, by **30th April, 1992.** Applications received late will not be entertained.

PROFORMA FOR APPLICATION

1. Name of the Scholarship Scheme:
2. Subject:
3. Name of the Candidate (In Block letters) with full mailing address.
4. Date of birth and the State to which the Candidate belongs
5. Whether Member of SC/ST (A certificate from the competent authority should be attached)
6. Academic record starting from High School/Higher Secondary (Attested/Photostat copies of certificate to be attached).

Recent passport size Photograph duly signed to be pasted here. Without photograph application will be considered incomplete.

Name of the University/ Board/ Instt.	Examination(s)	Year of passing	Division class with position if any (in case no class is awarded and only grading is done the conversion formula may be mentioned)	Percentage of marks obtained and position if any	Subjects taken

7. Details of professional, practical, training and research experience specifying the period and number of papers published/previous employment with name and date of employment if any. 8. Nature of the present employment with name and date of appointment/designations and the name and address of the employer.
8. Nature of the present employment with name and date of appointment/designations and the name and address of the employer.
9. Have you been abroad? If so give full particulars of the Country visited and the period of stay. Also mention the date, month and year of return to India (Purpose of visit also be indicated).
10. Proposed Programme of study/research and training also specify
    - (i) The work at present engaged in.
    - (ii) Nature and Programme of study research/training desired.
    - (iii) Future plans/prospect after the proposed studies/ research training and
    - (iv) How are these related to the advancement of knowledge of Science and Technology in India.

Place: SIGNATURE OF CANDIDATE
Date:

NOTE: Employed persons must send their applications fully sponsored by the Employers. However advance applications will be considered provisionally pending sponsorship by employers provided attested copies of certificates of age and qualifications are attached to advance copy of the applications.

davp 91/762

UNIVERSITY NEWS, MONDAY, APRIL 13, 1992 Regd. No. R.N. 7180/63 Postal Regd. No. DE

THE EMBASSY OF ARGENTINA

AWARD

FIRST ANNUAL ESSAY COMPETITION, 1992

1. The Embassy of the Argentine Republic is pleased to announce the holding of its FIRST ANNUAL ESSAY COMPETITION, 1992, with a view to encouraging studies and research on aspects of the Argentine Republic as well as different facets of relationship between India and Argentina.
2. The Competition is open to undergraduate and graduate students of universities and institutions of higher learning in India.
3. Essays can be on any one specific aspect, past or present, of Argentina or Argentina-India relations in the fields of history, culture, economy, foreign policy, science and technology.
4. The essay should be original and should not have been published earlier. Style, presentation and innovative ideas will be given due weightage.
5. The essay should be in English language and should not exceed 25 pages. It should be typed in double space on A.4 size sheets (8, 1/4 x 11, 3/4 inches). It must be signed by the contributor with name, age, year of study, name and full address of the institution where he/she is studying and residential address of the contributor. The essay should be certified by the Professor or Head of the Department/Institution to the effect that the contributor is a bonafide student. Contributions sent unsigned and/or without the certification of the Professor/Head of Department/Institution will not be considered.
6. The envelope should be superscribed as "FIRST ANNUAL ESSAY COMPETITION, 1992" and addressed to: The Ambassador of the Argentine Republic, B-8/9 Vasant Vihar, New Delhi-110057, so as to reach the Embassy not later than JULY 15, 1992.
7. The contributions will be judged by a panel of distinguished professors/scholars. Their decision will be final. No correspondence will be entertained on the question of assessment of the essays.
8. Award winning and selected essays may be published by the Embassy for free circulation. The copyright of all entries will rest with the Argentine Embassy in India.
9. The following prizes will be awarded:

FIRST PRIZE : Rs. 8,000/-
(Rs. eight thousand)
(A Citation)

SECOND PRIZE : Rs. 5,000/-
(Rs. five thousand)
(A Citation)

All other entries will receive a Certificate for participation.

10. Results will be announced on SEPTEMBER 15, 1992. Award Ceremony will take place in New Delhi in OCTOBER 1992.

New Delhi, March 1992

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University News

C.F.T.R.I. MYSORE

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Maintenance Grants for Universities

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Teaching – An Overrated and Outdated Activity

●

Women's Studies in Curriculum Development

●

Research Approach Via Value-Manifestation

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Science in India

●

Mental Health and Teachers

●

UNESCO Chairs for Varsities

EXECUTIVE DIRECTOR'S POSITION

THE UNITED STATES EDUCATIONAL FOUNDATION IN INDIA
(USEF/I)

Applications are invited from Indian and American citizens for the Executive Director's position at the United States Educational Foundation in India (USEF/I), a non-profit bi-national educational entity responsible for administering the "Fulbright Academic Exchange Program" in India. Candidates must have at least ten years' experience as a senior administrator plus a degree from, or teaching experience in, an American university if Indian or an Indian university if American.

The Executive Director's position requires dynamic management (fiscal and personnel) capabilities, strong oral and written communication skills. An understanding of Indian and American societies and educational systems is essential. Experience in multi/bi-laterial organisations is preferable. Teaching/research experience in the social sciences, arts and humanities is desirable.

Duties will include, but not be limited to, the complete administration of the New Delhi headquarters and three regional offices located in Bombay, Calcutta and Madras. Total staff at all four locations is approximately forty-five. Applicants must be effective when interacting with Indian and American government officials and academics. Applicants must be able to give direction in implementing an international exchange program compatible with the changing needs of both countries; ensuring that USEF/I fulfils the legislative intent and purposes of the bi-lateral agreement. Job functions are divided equally between administration and public relations. Extensive travel within India; abroad, required.

A five year renewable contract beginning between August and November of this year; salary negotiable. Apply in confidence by **May 15, 1992** to :

The Chairman
USEF/I Board
c/o American Center (USIS)
24 Kasturba Gandhi Marg
New Delhi - 110001, India

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Editor :
SUTINDER SINGH

Maintenance Grants for Universities

S. Muthukumaran*

Every university must have the necessary income to meet all the reasonable expenditure for performing its duties and activities, directed towards fulfilment of the objectives for which the university was established. The body which established the university must necessarily bear mainly the anticipated expenditure or help the university in finding its resources, as the university is its own baby.

Universities in India have been established with a few exceptions by State Governments or by the Central Government. Even those established by private philanthropists generally depend on government grants for their maintenance and development. The universities may be of the affiliating type or unitary type.

This paper deals with the grants for the maintenance of the universities established by the State/Central Government. For meeting the maintenance expenditure, two types of provision of grants by governments is in vogue. They are known as deficit grant and block grant systems. The essential difference between the deficit financing system and the block grant system is that in the latter system, if a university is able to save some money from the government grant, it is free to use the same for any expenditure on capital works or welfare activities or any other activity in the exercise of its duties; whereas, in the deficit financing system, the saving will be carried over to the next year as grant for the year. Thus, the essential advantage of the block grant system is that it provides all the required freedom to function and encourages the saving habit; on the other hand, in the deficit financing system, the universities tend to extract as much as possible from the government and tend to spend the same within the stipulated period.

Sources of Income

The sources of the general affiliating type universities are as follows:

1. Affiliated colleges :
   fees for affiliation
2. Students in the colleges and departments :
   recognition fees
   registration fees
   sports fees
   examination fees
   condonation fees
   fees for other certificates, diplomas, etc.
   miscellaneous fees
3. Students in departments :
   tuition fees
   special fees

**Vice-Chancellor, Bharathidasan University, Tiruchirapalli.*

4. Government : Maintenance grant including the grant to meet the commitments due to D.A. instalments and other items announced by the government as welfare measures.
5. Other miscellaneous items : Income from extension activities and distance education, etc. – sale of publications, sale of waste papers, usufructs of the campus and the like.

In the unitary type of university, source item No. 1 does not exist; source item No. 2 will be restricted to the departments or constituent institutions of the university.

Classification of Expenditure

The expenditure of the university may be classified broadly as follows:

1. General administration including the expenditure for the meetings of the senate or general council and the syndicate or governing council.
2. Expenditure for maintaining the teaching and research activities in the various departments.
3. Expenditure of the examination wing.
4. Expenditure in connection with the meetings of boards of studies and academic council and other academic activities such as curriculum development, students' information and placement and the like.
5. University publications.
6. Extension activities – Distance education activities.
7. Normal developmental activities.

Nature of Expenditure

A study of the nature of the different types of expenditure indicates the expenditures like those of the examination wing and examination related activities, university publications, extension activities including distance education may be self-supporting. But other items of expenditure like general administration, departmental activities, academic administration including curriculum development and normal developmental activities must necessarily have to depend upon the grants from the government which has established it. As a matter of fact, the expenditure in the departments may be further subdivided as expenditure for offering undergraduate degree programmes, master's degree programmes and M.Phil. programmes and expenditure for research activities. The nature of these expenditures is such that they cannot be met wholly from the fees collected. Hence these too require support from governments.

Present Method of Fixing the Maintenance Grant

Wherever deficit financing system is in vogue, the government officials (education and finance) on the finance committee of the university study in detail every item of income and expenditure and find ways and means of increasing the income and curtailing the expenditure. The officials of the university will have to justify their draft budget item by item.

Where the block grant system is in vogue, the government reviews once in five years the financial position of the university and fixes the block grant for the next five years. As experience has indicated, the government requires that the surplus from examination-related activities and distance education activities are to be used for maintenance of other activities, the block grant to be provided by the government is reduced to that extent.

Rational Approach

The present methods of arriving at the maintenance grant, either in the deficit financing system or in the block grant system, appears to be irrational and not conducive to financial discipline either on the part of the university or on the part of the grant-giving authority.

The maintenance grant may preferably be arrived at for each of the type of activities of the university and then summed up. The expenditure on the undergraduate, masters and M.Phil. programmes offered in the departments of the university may be supported by the government in the same manner as it supports such programmes in the aided colleges. The grant may perhaps be computed on the basis of the average amount given for such activities in aided colleges, so that it will be recurrent component of the maintenance grant. The grant for research activities may be based upon the number of departments and their research programmes. Of course every university established by the government must necessarily have the departments in the core basic disciplines generally offered in a university system. The opening of additional disciplines may perhaps be specially sanctioned from time to time. The grant for general administration and academic administration may perhaps be fixed by considering the student strength in the affiliated colleges, as the extent of these operations depend upon the number of students belonging to the system.

The expenditure on the examination-related activities, university publications, extension activities and distance education activities may be required to be self-supporting. The normal developmental activities may be estimated on a percentage of the grant amount arrived at for the maintenance of all the activities of the university as outlined above.

Classification of the Universities

Not all universities are provided grants to meet a substantial portion of their expenditure. Based on the degree of dependence of the university on government grant for its maintenance expenditure, the universities may be categorised as follows:

1. Grant is sufficient to cover more than or equal to 70% of the maintenance expenditure.
2. Grant is more than or equal to 30% but less than 70% of the maintenance expenditure.
3. Grant is just less than 30% of the maintenance expenditure.

Unitary type universities which are offering undergraduate programmes in their departments or constituent institutions for a large number of students will naturally fall under category 1. Large affiliating type of universities may fall under category 3. The other affiliating type universities may fall under category 2.

The government may consider imposing government scales of pay, welfare measures and all government rules for universities under category 1. Their accounts may be audited by the State auditors. The composition of the authorities may also be such as to allow a close monitoring and control over their activities. Such universities may preferably be under the deficit financing system. The annual report of such universities must be placed before the Legislature every year.

Universities falling under category 3 may be permitted to follow their own rules and scales of pay; but the requirements to follow certain statutory provisions like reservations in appointments and admissions should apply. They may also be allowed to adopt their own welfare measures for staff. They may be free to engage their own auditors. The composition of the statutory authorities may also be such as to allow them a freedom to have donor members, life members and the like. They may be given adequate freedom to develop on their own. The government may review their work once in five years and the review report may be placed before the Legislature. Based on the review, the government may revise the block grant.

For those universities which fall under category 2, a *via-media* may have to be worked out. They may also be under the block grant system. But they may be required to follow government scales of pay and welfare measures. This will encourage them to improve their finances and move to category 3, if they want to enjoy greater freedom in management.

Conclusion

It should be clear in the light of the foregoing analysis that the subject of maintenance grants for the universities calls for rationalization based on certain basic financial norms and goals as follows:

* an inbuilt incentive mechanism for the universities to generate their own resources and minimise their dependence on government grants (the lesser the proportion of government funding, the greater will be the freedom for the universities to manage their affairs).

* a system of social 'auditing' and review of the progress made by universities (the progress of every university must be subjected to review by the State Legislature which can, in due consideration of the progress of individual universities, approve additional grants; this will ensure a sense of accountability to the society on the part of the universities).

* a rational reconceptualisation of the revenue-expenditure components of the university system in order to compute the maintenance grants, as explained in the foregoing for instance, surplus on examination and other accounts be not deducted from the maintenance grant; U.G., P.G./research programme grants for the universities may be treated as regular recurrent components in the maintenance grant as in the case of the aided colleges.

These suggestions, if accepted and implemented, will go a long way in stabilizing the financial status of the universities and helping them work for academic excellence in an atmosphere of assurance and greater academic freedom.

To Our Readers

Knowledgeable and perceptive as they are, our contributors must not necessarily be allowed to have the last word. It is for you, the readers, to join issues with them. Our columns are as much open to you as to our contributors. Your communications should, however, be brief and to the point.

Teaching – An Overrated and Outdated Activity

Gitika Dutta Dhupker*

John Dewey said, "Democracy must be reborn every 20 years and education is the midwife."

Education in any social order arises out of the need to perpetuate the society, to provide continuity in its way of thinking, doing and behaving, to reinforce its value structure and to establish conformity to those norms that it sees as consequential and sustaining. At the same time, to ensure its viability in a changing, demanding and challenging modern world setting, it must seek to redirect and reconstruct the social order to meet the needs of the future.

Education in a democratic society is of a particular hue and tone. It is infused with a certain vision of man, of what he is and what he may become. It subscribes to ends that are describable in words such as freedom, justice and equality. It is charged with the responsibility for translating these words and concepts for which they stand into reality. It must determine the means by which this will be achieved. In its mind's eye, it must picture clearly the person who is the tangible embodiment of the democratic concepts and ideals. Education has meaning only in terms of human flesh and blood. Individuality is clearly the focus of concern.

No teacher can operate without this philosophy of education. As Sawyer has pointed out : The two key words, love and wisdom, are particularly applicable to education at this point in its history; they seem seldom to have been heard less frequently. A teacher working through to a philosophy of education need to see education as whole, to have the insight, the sentiments and the convictions that enable one to react unhesitatingly and truthfully to all situations in a manner in tune with one's being.

The world educational crisis is a growth crisis. It reveals a change taking place in humanity. Like a birth it cannot be stopped. On the other hand it is a process which can be assisted through an understanding of its nature and the quantitative factors involved. This also provides an opportunity for effective action in the direction of what is happening.

To be armed today with what McLuhan calls a rear-view mirror mentality and to fail to accept change is to court doom. The revolution we confront is a revolution of rising expectations born out of the crisis of denial of what is most deeply human, of decency, integrity, wholeness, a crisis brought about by man's inhumanity to man. It is remediable only by a return to humanness. Weston La Barre speaks of "The Human Animal" and Desmond Morris of "The Naked Ape", both remind us of man's origin and his limitations when acting in animality. Education is the means whereby students learn their humanness; it is necessarily an interaction suffused with sentiments. Education begins when the student asks "Am I loved?" It ends when the answer is "No".

In surveying education today, what impresses most is how greatly change is needed and how slowly and haltingly it occurs. One of the areas that needs most change and has not changed, is the concept of teaching and the role of teachers in the ever changing concept of education. The programme learning have entered, the mass media have entered into active competition with the teachers, the classrooms have changed, the students' psychology has changed – so agitated; a resolution of rising expectations, the society has changed – so violent, so chaotic; what has not changed is our understanding of teaching in this changing environment and the role of the teachers to tackle these changes. In this kind of flux, teachers and teaching can no longer hold their mystical position. In fact, it has rather become a myth in an ever-changing world of education. The lack of responsiveness of teaching and teachers from its mystic to mythic position is understandable.

The teachers may react with annoyance, but the fact remains that our teachers have failed by the mechanization of teaching. Today with the entry of machine and media, the position of teachers may not only become dispensable but easily substitutable. Furthermore, such media as have set an adjunct to teaching may end up as the master whom the teacher must obey. What do the teachers do to avoid this Frankestein effect and become obsolete?

With these considerations in mind, we have to make attempts to vitalise teacher education through a series of informative and provocative situation with the realities of the contemporary scene. Their analysis in the classrooms will help the teacher-to-be to visualise the relationship of theory to practice, in an atmosphere of

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immediacy and directness. Two main goals are sought here: One, an awareness of those values that make for rich, warm human living and learning, and two, the development of the powers and skills necessary of the tasks of education.

However, all is not dark on the teaching front if the teachers are willing to change their role and take up the crucial role and defend themselves against all teaching media by accepting those tasks that the machine cannot do e.g. developing attitude, motivation, discovery, creativity, development of feelings and other subtle outcomes of learning and teaching. We must admit that the human teacher, if he or she is to differ significantly from a machine, has to make a unique and irreplaceable contribution to the teaching act. Only when such a contribution is made, does "who" the teacher is becomes part of "what" is being taught. But to make a unique and irreplaceable contribution a teacher cannot be a personality stereotype.

The implications of such radical changes are enormous for the educational profession (and threatening for linear educators). The student in the technological world is a participant in discovery and not the passive recipient of neatly pre-packed linear learning. The linear analytic and irrelevantly fragmented bits of information make increasingly less sense. The young learners are no longer looking for detached pattern or ways of relating themselves to the world.

In fact, classroom audience take a participatory role in the learning process, they need a break from the linear, print-oriented pattern; they require multi-media, multi-instruction learning situation. They need individualized learning as opposed to passive lectures in the classroom learning with responsibility shifting from the teacher to student.

The Unchanging Teacher in an Ever-Changing World

One of the astonishing facts about the otherwise unastonishing problem of education is the neglect of the issues of teacher education. If one follows and analyses the professional and public reflections about teacher education, one finds under the rhetorics and curious summary of hypothetical issues, teacher education is where it has always been. That is to say, it is put off to one side and dealt with perfunctorily, as if its major questions have all been answered by call for more academic preparation, better practice-teaching, and a less inhibiting system of accreditation. The direct link between education of teachers and the going concern of every sector of the society, the direct connection to the major political and social issues of contemporary world society, the direct responsibility for the quality and scope of our culture and moral life, have all been missed or deliberately ignored. In short, the education of teachers has been separated from the major intellectual, social and psychological forces of contemporary history. It is conceived to be the acquisition of a skill, a skill of assembled authorized information, distributing to young adults, and testing their ability to receive it and reassemble it.

In fact, it is nothing of the kind, the role of the teacher in any society lies at the heart of its intellectual and psycho-social life, and it is through the teacher that each generation comes to terms with its heritage, produces new knowledge, and learns to deal with change. Provided, that is, that the teacher has been well enough educated to act as the transforming element.

The education of teachers is at the nerve centre of the whole educational system, and if it fails to function there, the system fails. When we talk about equality of opportunity for all, we are really talking about an equal chance for every student to be taught by a teacher who understands him, takes his limitations and strengths into account, and has command over a body of knowledge relevant to his teaching and to his place in contemporary society. When we talk about educating the gifted and the creative, we are really talking about people who are gifted and creative enough to teach the gifted and the creative, when we talk about educational failures and weaknesses, we are really talking about failures and weaknesses in teachers and teaching, if teaching is defined as a means through which those who are taught are enabled to learn.

Why, in the face of these facts, which are at the very least self evident, has the education of teachers never received the attention its massive importance demands?

This is mainly because of two reasons, as I feel, one, the public concept of education itself has been too narrow for the large dimension of the task to which it has been assigned. The task is to sustain the spiritual force of a democratic ethos and, at the same time, to create the conditions out of which the millions of students of an expanding society can each make a contribution to the creation of great art, great discovery, great works, great science, and a great society. In a democracy, the welfare of the society rests on its educational system.

But the concept of education held in the public mind and reflected in the practices of the schools, colleges and universities, is that of a formal training in academic subjects leading toward the achievement of a favourable position in society. Higher education thus becomes a higher form of the same kind of training, leading to a higher position in society.

What is sadly missing in the concept, is the idea of education as a liberation of oneself into new levels of intellect and emotion, education as a means of achieving new capacities and insights, which can then become part of the stream of contributions made by the human race in the development of societies and civilizations.

Consequently, coming to the second reason, the idea of teaching and of the education of teachers has been narrowly conceived to fit a narrow concept, and the teacher is less of an intellectual or cultural leader than an agent of social service. He prepares himself, not to serve as an example of man thinking or of man bringing ideas into life, but as man transmitting a curriculum. It follows that his education as a teacher need consist of nothing more than a knowledge of the material in the curriculum which he has learned how to transmit to pupils by studying methods of transmittal and practicing them in a classroom.

The education of teachers, or teacher training, to use its name, is therefore of no great consequence in the public mind. The teacher is a person who is certified as a practitioner of cultural transmission. It is not necessary for his employment that he is a scholar with an intellectual life of his own, nor is it necessary that the people who administer the educational system be scholars or even teachers. They are cultural entrepreneurs, responsible to the parents and the community, for seeing to it, that the cultural transmission occurs properly, and that the students become qualified for entry into further education and entry into a congenial place in society.

We will never achieve the goals we seek in education until we alter these concepts and turn to the truth about teaching, that it is creative art, a healing art, that it demands for its true accomplishment the qualities of character and intellect that can be gained only by those who are moved to reach out toward them.

Until now, we have never mounted a full-national attack on the problem of educating teachers, using large resources in money and intellect, no matter what proclamations have been made about the crucial role of education in the national welfare. The universities have left it to the teachers colleges and teachers colleges have now begun to model themselves on the universities to seek respectability. In doing so, they have usually given up the idea of teaching as a vocation in favour of the idea of the teacher as a man who has met university requirements. We can no longer afford our negligence. The urgency of the present situation demands lead-on-action, on a large scale.

When I speak of the present situation, I begin with the proposition that the radical social changes have far out-run the ability of the educational system to keep up with them. It is of course true that there is always an organic connection between changes in society that force new demands upon education, which, in turn, by the character of its response transforms the demands into a series of further changes within society and that these changes that cannot be stopped must be dealt with. Because the function of education is to anticipate and to give directions to changes that are occurring day by day within world society and its local counterparts, not simply to confirm those changes.

It is this power that must now be used in joining forces of social change in a frontal attack on the problem of educating teachers. We have here the concept and the elements for a radical reform in the education of the teacher. The reforms start with an exact reversal of the philosophy dominant in present programme. That is to say, rather than thinking of the number of courses, credits and subjects necessary to certify a teacher, we set aside all formal requirements and start from the beginning with the question of what is to be done to enhance the personal and intellectual growth of the person who is learning to be a teacher.

A Role Change for Survival

Thus we are, in my view, faced with an entirely new situation in education where the goal of education, if we are to survive, is the facilitation of change and learning. The only man who is educated is the man who has learned how to learn; the man who has learned how to adapt and change; the man who has realized that no knowledge is secure, that only the process of seeking knowledge gives a basis for security. Changingness, a reliance on progress rather than upon static knowledge, is the only thing that makes any sense as a goal of education in the modern world. Under this situation, teaching (which means to instruct) has become a relatively unimportant and vastly over valued activity. Teaching and the imparting of knowledge makes sense in an unchanging environment. This is why it has been an unquestioned function for centuries. But if there is one truth about modern man, it is that he lives in an environment which is continually changing. The physics that is taught today will be outdated in a decade. The teaching of psychology will certainly be out of date in 20 years hence, the so called "facts of history" depend largely upon current mood and temper of the culture. Chemistry, biology, genetics, sociology, are in such flux that a firm statement made today will almost certainly be modified by the time the students get around to using the knowledge.

What then is the role of the teacher in this flux of change and explosion of knowledge? Certainly not to "instruct" and "impart information", but a much more dynamic, creative and challenging role – a facilitator of learning. That is to transform a class of passive receivers into a community of learners to free curiosity, to encourage individuals to go charging off in new directions dictated by their own interests, to open minds to questioning and exploration – from such facilititators of learning arise true students, real learners, creative and courageous; the kind of individuals who can live in a delicate but ever changing balance between what has been learned and what is to be learned, in short, develop a learning man and not a finished product, interactions that encourage self-initiated, significant, experiential, "gut-level" learning, presently learned and known, and the flowing, moving, altering problems and facts of the future. Here then, the facilitation of learning becomes the aim of education and the main role of the teacher that of a facilitator, not a person with bags full of knowledge and lists of degrees but a person destined to guide, direct and motivate a community of learners. It goes without question that the skills required for fulfilling these objectives would be entirely different from the criteria on the basis of which teachers are selected presently.

This facilitation of learning as the function which may hold constructive, tantative, changing, process answers to some of the deepest perplexities which beset man today.

The initiation of such learning rests not upon the teaching skills of the teacher, not upon his scholarly knowledge of the field, not upon his use of teaching media, not upon an abundance of books; the facilitation of significant learning rests upon certain attitudinal qualities which exist in the personal relationship between the facilitator and the learner. These findings are found not only in the field of psychotherapy, but these findings apply in the classrooms as well. The intensive relationship between the therapist and client exists in the countless inter-personal interactions between the teacher and his or her pupil.

From Teaching to Facilitation of Learning

Now we come to the discussion of those qualities, which facilitate learning. Can we think of emphasising these qualities and inculcating them in our teachers? By revamping teacher education.

The basic of these essential qualities is realness or genuineness without sterile facade, a vital person, with convictions, with feelings; a person to the students, not a faceless embodiment of a curricular requirement, not a sterile tube through which knowledge is passed from one generation to the next. He or she does not fit into some neat educational formula. There is a tendency of most teachers to show themselves to their pupils simply as roles. It is quite customary for teachers rather consciously to put on the mask of being a teacher and wear it all day long and remove it only after leaving the premises of the institute, college, school etc.

Why can't teachers stop playing games? Why can't he or she be a real person in his or her relationship with his or her students? Come into direct personal encounter with the learner, meeting the learner on a person-to-person basis by being himself and not denying himself? He can be enthusiastic, he can be bored, he can be interested, he can be angry, he can be sensitive and sympathetic. Only when a teacher accepts these feelings as his own, he has no need to impose them on his students. It is the transparent realness which makes one an exciting facilitator of learning.

A student who can relate to the teacher develops a tacit understanding. This adds to the in-class participation. Many teachers would fail to agree to relate to students in one-to-one basis because, they would feel that they would lose the students' respect. On the contrary, teachers gain their respect through their ability to speak to the students at their level, instead of being ten miles above them. This leads to complete break in communication. It is an experience to see teacher and student communicating on an adult, intelligent level, thereby creating a climate for learning so different from the ordinary classrooms.

There is another attitude which stands out in those who are successful in facilitating learning, is a basic trust, a belief that this other person is fundamentally trustworthy. One may call this prizing, acceptance, trust or by some other terms, it shows up in a variety of observable ways. The facilitator who has a considerable degree of this attitude can be fully acceptant of the fear and hesitation of the student as he approaches a new problem, as well as expectant pupil's satisfaction in achievement. Such a teacher can accept the students' occasional apathy, his erratic desires to explore by roads of knowledge, as well as his disciplined efforts to major goals. He can accept personal feelings which both disturb and promote learning – rivalry, hatred of authority, concern about personal adequacy – in short prizing of the learner as an imperfect human being with many feelings, many potentialities. The facilitation, prizing or acceptance, of the learner is an operational expression of his essential confidence and trust in the capacity of the human organism.

A further element which establishes a climate for self-initiated, experiential learning, is empathetic understanding. When the teacher has the ability to understand the students' reactions from the inside, has a sensitive awareness of the way the process of education and learning seems to the student, then again there is the likelihood of significant learning.

This kind of learning is sharply different from the usual evaluative understanding, which starts with, "I understand what is wrong with you". When there is a sensitive empathy, however the reaction in the learner is entirely different. This attitude of standing in the other's shoes, of viewing the world through the students' eyes, is almost unheard of in the classroom. One could listen to thousands of ordinary classroom interactions without coming across one instance of clearly communicated, sensitively accurate, emphatic understanding. But it has tremendously releasing effect when it occurs.

On of the biggest achievement under this type of classroom interaction is by no means restricted to greater achievement in the three R's. But the most striking learnings of students exposed to such a climate are more personal one – independence, self-initiated and responsible learning, release of creativity, a tendency to become more of a person.

I have come across teachers and leading scholars arguing that it is absurd to try to encourage all students to be creative – a lot of them are mediocres whom we need as technicians, workers etc., and if we have few creative scientists and artists and leaders emerge, it's enough. I am sorry I can't be cooly scientific about this. It's enough for whom? When we realize the incredible potential in the "ordinary" student, it becomes our duty to release this incredible energy; and if we do not devote equal energy – yes, the equal money – to the release of the potential of the individual person, then the enormous discrepancy between our level of physical energy resources, and human energy resources will doom us to a deserved and universal destruction. And teachers who hold such attitudes will understand that the problems which concern them have to do with the release of potential not the deficiencies of their students; they may need to create classroom climate where there are no very good students and not so good students, but a psychologically open climate where every student learns to achieve the maximum and release his/her best, and this can only happen when we are willing them to become self-starting, self-initiating learners, and this kind of learner develops in a growth promoting, facilitative relationship with the teacher.

One of the primary functions of education of teachers today is to challenge students to develop the rationale, and insights necessary for making significant decisions. Beyond mere thinking and acting, students must be brought to a deep-seated sense of responsibility for their actions. They must become sensitive to the relationship among people, and to the complex of interaction that make community living possible. They must commit themselves to the most important career in social order, one that is exciting, demanding, and challenging. They must look forward to a life time of change and growth, in a revolutionary era that they will help to shape.

The whole crisis today is that, in this flux, the old established role of a teacher no longer holds good. What does it mean to be a good teacher? What does it mean to be a human being? are questions that our educational objectives should try to grasp and understand. It is only when we focus our attention on the facilitation of learning how, why and when the students learn and how learning seems and feels from the inside, we might be on a more profitable track.

Hence we may say, that the teacher whose orientation is towards releasing the students' potential, exhibits a high degree of these attitudinal qualities which facilitate learning. The teacher whose orientation is toward the shortcomings of his students exhibits much less of these qualities.

Thus the whole argument can be wound up by saying that, when a facilitator creates, even to modest degree, a classroom climate characterised by such a realness, prizing and empathy, he discovers that he has inaugurated an educational revolution, learning of a different quality, proceeding at different pace, with a greater degree of pervasiveness, occurs. Feelings – positive and negative, confused – become a part of the classroom experience. Learning becomes life, and a very vital life at that. The student is on his way, sometimes excitedly, sometimes relevantly, to becoming a learning, changing being.

It is most unfortunate that education and the public thinking about and focus on, teaching it leads them to a host of questions which are either irrelevant or absurd so far as real education is concerned.

Today's informed and militant educator no longer simply follows the lead of others; he accepts the responsibility for speaking out in a strong clear voice in educational decision making. He is deeply committed to a posture that challenges the past. He is an activist, who is willing to pay the price for being "where the action is". He is determined to help channel the direction in which the action goes.

Women's Studies in Curriculum Development

L.N. Mittal*

During the past two decades, women's issues are being increasingly added to the curriculum of undergraduate and postgraduate courses of Indian universities.

Objectives and definitions of 'Women's Studies' have been defined differently by different scholars. However, the main thrust may be on the following :

1. To promote better and balanced understanding of our societies;
2. To contribute to the pursuit of human rights;
3. To render 'invisible women visible' and in particular women of the most under privileged strata;
4. To investigate the causes of disparity by analysing structural as well as attributive and cultural factors;
5. To analyse the responses of women to the processes of change;
6. To assist both men and women to understand the importance of balance of roles of both the sexes; and
7. To empower women in their struggle for equality and for an effective presence in all areas of development of the concerned society[1]. The growing crisis in the society with increasing inequality, poverty and assault on people's civic rights against political oppression, and the alarming rate of violent crimes against women have also been the cause of awareness of women's rights and role in the society and subsequent development of women's studies in Indian universities.[2]

Structurally, pedagogically and philosophically educational institutions, need to play a far more effective role in the development of a new cultural ethos that can contribute to the realisation of the goals of comprehensive development of human material. This also requires that the educational institutions internalise the concerns for the equality of women. The promotion of new knowledge about women and new perceptions of the role of women in development should be viewed as an instrument of social change.[3]

Another expert report calls for :

1. Inclusion of women's issues as an integral part of teaching curriculum in various disciplines;
2. Higher level of investment in research on Women's issues; and
3. Increasing women's participation as central to all the activities in a society[4].

Gender disparities can be bridged by distributive justice to reduce inequalities in resources and power. Amongst the powerless vis-a-vis the more powerful, women's subordination to men due to class, caste, religious laws and rituals, prevalent social values and kinship relationship within family constitutes an additional reason of gender disparity.

Sanskritisation process[5] still remains more powerful in our society, than the ethos of equality that our political and legal structure upholds.

The Ramamurti Committe, appointed to review the National Education Policy, 1986, has also recommended the revamping of the teacher education programmes in India. The Committee found the present teacher education programmes more theory-oriented and isolated from community and devoid of techniques of human development[6].

In a recent study of the World Bank[7] five major issues faced by planners of education in Third World countries have been identified:

1. Educational systems are often dysfunctional both for the economy and for the large majorities of school leavers.
2. Educational systems generally fail to achieve effective mass participation in educational opportunities.
3. Educational systems and policies are of regressive character which favour urban populations and middle and upper income groups.
4. Educational systems are inefficient in using resources and often do not achieve their quantitative and qualitative goals.
5. The educational planning and management are inadequate in view of magnitude and complexity as well as limited resources and unlimited demands.

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Gender disparity and women's struggle is to be viewed as multi-dimensional social problem as a hindrance in building an egalitarian society.

In different disciplines of arts, humanities, social sciences, pure and applied sciences and commerce and management, themes pertaining to socio-cultural plurality[8], Indian Political System with reference to women, marriage and divorce rights, power leadership, family and property, national liberation movement, human rights, rise of feminism, surrogate proletariat, sexual division of labour, behavioural disorders, child development, health and nutrition, economic status of women in workforce – tribal, rural and urban, socio-cultural evils, law pertaining to women, scientific temper, population explosion and environmental pollution, food and water shortage, non-conventional energy source etc, can be suitably included to develop an educational system which is not sexist.

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POSTGRADUATE INSTITUTE OF MEDICAL EDUCATION AND RESEARCH
CHANDIGARH

ADMISSION NOTICE NO. 26/92 (ACAD)

Closing Date for the Receipt of Applications is 11th May, 1992.

Applications, on prescribed form, are invited for the following postdoctoral (DM/M.Ch.), doctoral (Ph.D.) and postgraduate (M.Sc.) courses for the academic session commencing from First July 1992:

1. **Senior Residents - 14** - for DM/M.Ch. courses in the following subjects:
   i) for DM courses – 10-Cardiology-2, Gastroenterology-2, Neonatology-2, Neurology-2, Pulmonary Medicine-1 and Clinical Pharmacology-1.
   ii) for M.Ch. courses – 4- One each for Cardiovascular & Thoracic Surgery, Neuro-Surgery, Paediatric Surgery and Urology.
   a) Two seats may be available for deputed/sponsored candidates in each of the subjects of Cardiology, Gastroenterology, Cardiovascular & Thoracic Surgery, Neuro-Surgery and Clinical Pharmacology as also for Endocrinology and Plastic Surgery. One seat for such candidates may be available in each of subjects of Neurology, Neonatology, Pulmonary Medicine, Paediatric Surgery, Urology and also for Nephrology.
   b) Upper age limit on 1.7.1992 :- Not more than 35 years for general candidates and 40 years for candidates belonging to Scheduled Castes/Tribes for ex-servicemen and commissioned officers including E.C.Os/S.S.C.Os. who have been released on satisfactory completion of assignment (including those whose assignment is due to be completed within 6 months). No upper age restriction for deputed/sponsored candidates.

2. **Ph.D. Programme**
   Vacancies exist in the following departments :
   Anaesthesia, Biochemistry, Biophysics, Cardiology, Community Medicine, Endocrinology, Experimental Medicine, Gastroenterology, Immunopathology, Medical Microbiology, Paediatrics, Parasitology, Pharmacology and Psychiatry (including Clinical Psychology).

3. **M.Sc. (Biochemistry) - 5 seats**

4. **M.Sc. (Pharmacology)** - 3 seats : One seat for each of the above two M.Sc. courses is reserved for candidates belonging to Sch. Castes/Tribes.

GENERAL INFORMATION

a) For all courses, where MBBS or MD/MS is an eligibility requirement candidates who have made more than one attempt (i.e. have more than one failure, compartment or reappear) during their MBBS course are not eligible. However, those belonging to Sch. Castes/Tribes with up to two attempts in their MBBS career will be eligible.
b) Those applying for the reserved seats must append, with their applications, a certificate from the competent authority mentioned in the brochure of information in support of their claim. No other certificate will be entertained.
c) The candidates appearing in the qualifying examinations in April-May, 1992 i.e. MD/MS for category 1, M.Sc. etc. for category 2 and B.Sc. etc. for categories 3 & 4 can also apply if otherwise eligible. Such candidates will be admitted to the entrance test only if they supply the result of their qualifying examination from the University concerned at least two days before the entrance test.
d) The number of seats wherever indicated is provisional and is subject to change without prior notice.
e) The application must be accompanied with non-refundable fee of Rs. 60/- in the form of postal order/bank draft drawn in favour of the Director for each of the courses mentioned above. A candidate applying for more than one subject/course is required to submit separate application, complete in all respects, for each subject/course.
f) Application form along with brochure of information are available from the office of the undersigned either personally on payment of Rs. 20/- at the counter from 10.30 AM to 11.30 AM on all working days and from 2.30 PM to 3.30 PM on all working days (except Saturdays) or by post for which the request must be accompanied with a self-addressed envelope size (23x10 cms.) bearing postage stamps of Rs. 4.50 and crossed postal order for Rs. 20/- drawn in favour of the Director.

O.P. Sharda
REGISTRAR

A Research Approach via Value-Manifestation

B.D. Chinara*

There is no dearth of research studies on values relating to different broad areas like humanities, social and behavioural sciences. The pages of value literature reveal that values are manifested by the individuals in multifarious ways. It is evident from the many interpretations of the term " value" which the individuals manifest 'as the worth of or appreciation for any object' (Losskey and Marshal, 1935; Park and Burgess, 1956 & Pepper, 1958); 'as an independent validity' (Fromm, 1947, Adler, 1956 & Reddy, 1979); 'through their perceptions about an activity or object' (Perry, 1954 & Smith and Peterson, 1977); 'as anything desirable' (Peterson, 1970 & Rokeach 1973) and 'via the process of valuing' (Raths, Harmin and Simon, 1978). This multimodal nature of value-manifestation tends to suggest three important points : (i) there is no consensus among the different ways values are manifested by the individuals; (ii) out of all the ways of value-manifestation there are some which are parochial and some others which are too broad; and (iii) in spite of complete absence of general agreement among and existence of narrow and broad denotations of the different modes of value-manifestations, they are complementary to each other rather than contradictory.

A critical look into the multi-modal value-manifestation from the bewildering interpretations of the term "value" tends to indicate the individuals' value subscriptions are manifested in two principal ways – thought and practice – rather than many. Precisely it may be stated that there are basically two distinguished operational modes by the aid of which individuals manifest their values i.e. covert modal approach and overt modal approach what Kluckhohn (1951) says as implicit method and explicit method respectively.

In order to facilitate the research work of researchers, whether novices or professional men and women, the bimodal nature of value-manifestation has been described in detail as follows :

Approach I : Covert Mode of Value-Manifestation.

Values are subscribed (not ascribed) by the individuals, covertly where these are treated as internal states or behaviours. The values expressed impalpably are not directly accessible to observations other than introspection (Adler, 1956). In this case, values precede action and guide it. Various critics opine that values which guide, remain at covert level and are inaccessible to the methods of scientific empiricism. Values of this kind, thus, have their solid ground on humanities including Philosophy, Literature and Fine Arts. Therefore, this kind of values may suitably be named as absolute or intrinsic values. Intrinsic values are generally internalized by the individual subjects and are believed to be manifested at commitment level which is beyond the levels of awareness and preference.

Approach II : Overt Mode of Value-Manifestation

Individuals subscribe values not only covertly but also overtly. The overt-manifestation of values is a two-sided affair and thus, has two aspects : observable behavioural actions and observable verbal expressions in terms of discourse and/or desirable preferences. Values of this kind have their base on social sciences (Sociology, Economics, Education, Psychology, Political Science, History and other similar disciplines) and behavioural sciences (Sociology, Education, Psychology and Anthropology). These values may be called as relative or extrinsic values.

On the basis of their nature of manifestation, the extrinsic values may further be classified into two types. Firstly, the values which are manifested via verbal expression but not through observable action may be designated as "Lip-service values" or "surface-floating values". Manifestation of these values reveals that the respondents are merely aware of them with certain degree of preference instead of committed to them. Thus, these values are considered to be good to be adopted by others. The research enquiry over this mode of value-manifestation suffers from two pertinent limitations : (i) Values are accepted by the subjects under study as preferable or desirable even though these are not actually implemented by them in their own lives; and (ii) the problem of hypocrisy. Secondly values which are manifested through actual behaviour but not subscribed at the verbal level may be named as "Operative values". Manifestation of these values reflects that the value-subscribers are committed to them. However, the research access through this mode of value-manifestation is not devoid of certain relevant drawbacks : (i) actual behaviour is humanly

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impossible to measure for a large number of people; (ii) conclusion arrived cannot be generalised universally because what an individual does at a given moment and under a given circumstance does not give a complete picture of what he wants to do in other situations of life, and (iii) the problem of false pretense.

The idea about the bi-modal character of value-manifestation cited here is presented by means of a schematic arrangement as given in the fig.

Conclusion

In conclusion it may be said that values secure their importance and relevance among the individuals primarily through both the covert and overt modes. It is never a question of "either/or" or "all-important/non-important" of both these modal approaches because these approaches do not take reverse position rather they stand adjacent to each other. The research approach via bi-modal value-manifestation, thus, helps the researchers to develop the tools of enquiry for investigating value patterns of an individual or a society as a whole. It is then obvious that no matter whether values are intrinsic or extrinsic in nature rather how they are perceived by the subjects under study. Again, it is not a matter of surprise whether values are operating at awareness level, preference level or commitment level rather it is the investigator who views their operations. Lastly, it is not a matter whether values are manifested covertly or overtly rather how their manifestations are dealt by the researchers from different disciplines. However, the research approach by the instrumentality of both these covert and overt methodologies has to be used with subtlety and care.

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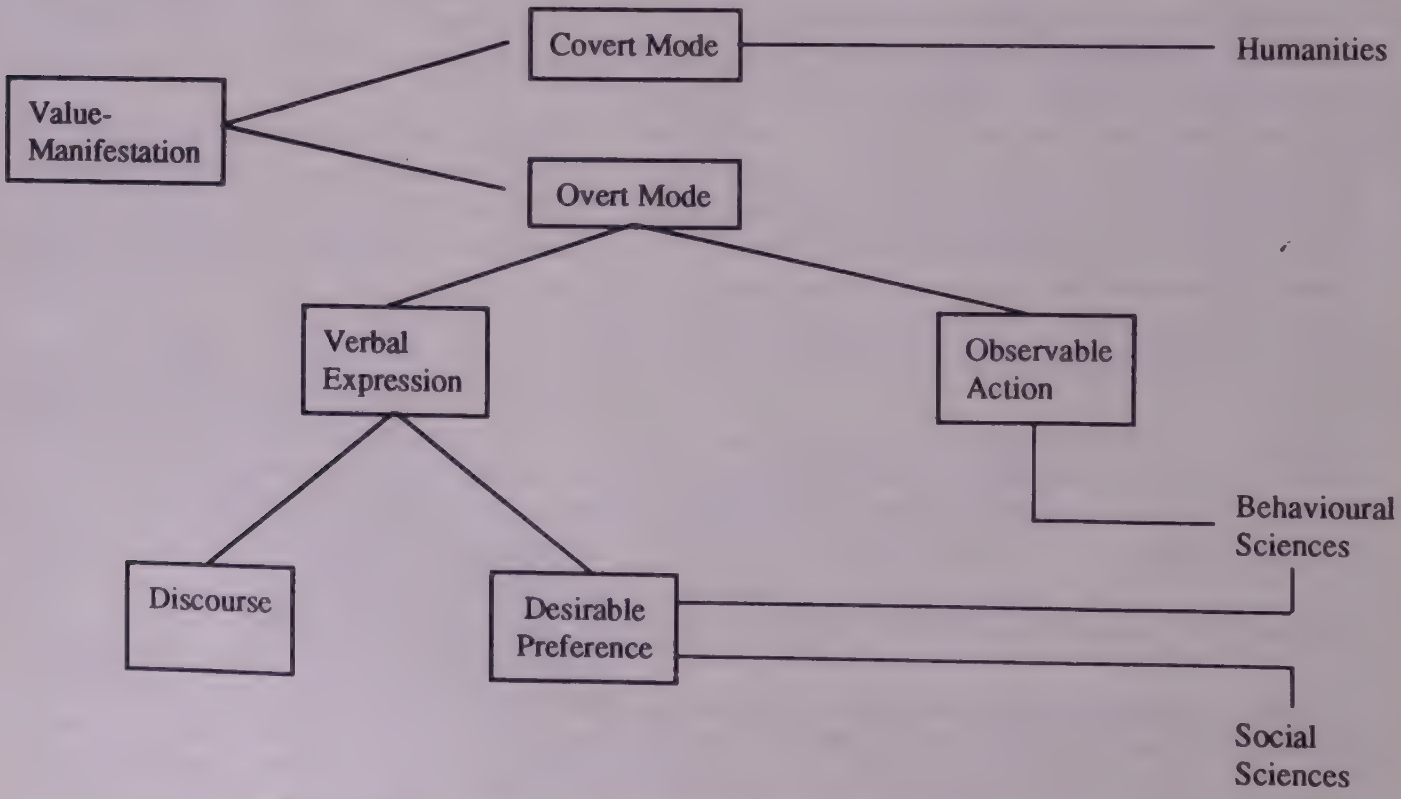

Figure : Schematic Layout of Bi-Modal Value-Manifestation

SCIENCE IN INDIA

"Science in India will flourish if we nurture excellence and respect and recognise it. The pyramid, to be stable, must have a sound and broad base. Excellence at the top has to be supported by thousands below. Unfortunately in India the spirit of working together in cooperation with each other is not strong enough. Those who have made significant contributions in science are too much conscious of them. They want to be regarded as unique persons. They do not nurse, support and encourage young people and do not maintain harmonious relations with their equals", said Prof S. K. Joshi, Director General, Council of Scientific and Industrial Research, New Delhi. Prof. Joshi was delivering the Convocation Address at the tenth convocation of the Dayalbagh Educational Institute, Agra. "What is needed is we foster the genius of the most talented and develop a sense of hard work and dedication in the entire scientific community", he added. Excerpts

Teachers and their Responsibilities

Teachers play a very important role in shaping the lives of the students. Teachers have to encourage young people, encourage them to think free and question them. Teachers should be concerned about the well being of their students. Teachers not only have to give students good and sound advice but cheer them up when they are in a difficult position. A teacher has to remain accessible to students. Teachers have to inspire students, guide them, encourage them and sustain them. We have to believe in students, praise them when they perform well, and criticize and correct them when they go wrong. We should realize that the destiny of the nation is being made in classrooms. Teachers can influence students profoundly at a formative stage and help in inculcating in them a value system which would enable them to grow into men of character. A good teacher earns enormous respect from his students, this also is his reward, I think the greatest reward.

It is the responsibility of teachers to locate ability wherever it is found. Many of our brilliant young minds get lost in the midst of poverty, neglect, disease and hostile environment. Many times at many institutions students become victims of bad and disgusting evaluation coloured by favouritism based on caste, creed, region, kinship and money. We, teachers should not fall prey to this immorality of corruption.

Teachers should also interact with persons working in other institutions. A good teacher is one who remains a student all his life, learning from his own study of good books and learning by his interaction with other learned persons. A teacher should not only keep his ears and eyes open, but keep his mind also open to new ideas and to fresh thoughts. The true mark of a good teacher is how much he can innovate, how much he can create and how much he can motivate students to higher levels of endeavour and achievement. A good teacher is fully dedicated to his profession of acquisition of knowledge and imparting it to others.

Our Responsibilities to Society

We are educated elite of the country and form a very small percentage of the total population who had access to higher education. I see young faces here who have tried to imbibe new knowledge in arts, science, economics and other subjects. You are the future citizens on whose shoulders the burden of carrying our country forward will fall. World is progressing at a very rapid rate but we in India are beset with many problems – problems of population, unemployment, illiteracy, health, food, communication, communal strife, terrorism, environmental degradation, rising prices, falling trade and investment. We have to safeguard our freedom and this task becomes difficult when we are economically weak. Our economic backwardness would make our nation prone to outside interference.

Our young men have got to look at the problems of the nation. We are facing a number of grave and serious problems. In your own small way you should try to ease the bitterness, tension and conflict which surround us today. Students have to help in strengthening our society and see that the threats to the stability of the country are minimized. The youth must get involved in constructive activities like adult education, social service, upliftment of weaker sections of society and sanitation. He must help in generating communal harmony. A few mad people have caused threats to communal harmony and the integrity of India. A house divided cannot stand. In order to make our country we must all help each other in defeating the divisive forces. Our strength lies in the diversity of our people with their shared patriotism. We believe in the liberty of the individual under the law. We also realize that intolerance of other religions is a dangerous disease. We all should act in such a way that every person in our country is able to live with dignity.

Science in India

Sir C.V. Raman, who won Nobel prize for his discovery, said, "There is only one solution for India's economic problems and that is science, more science and still more science".

In addition to its economic and social benefits, science is a wonderful and inspiring exploration of truth and the laws of Nature which govern all phenomena. Scientific discovery, according to Raman, is described in following words:

> "The word discovery suggests a dramatic and exciting event, like finding a fifty carat diamond in a ploughed field. The history of science is indeed full of such dramatic discoveries, the drama and excitement being particularly manifested in the personal behaviour of the scientist immediately following the event ..... The classic story is of Archimedes who rushed into the street straight from his bath with nothing on, crying "Eureka, eureka", when his famous principle of hydrostatics flashed into his mind. The point of the story is the intense emotion aroused by a sense of overwhelming importance of the new idea. The joy and exaltation felt at such a moment are indescribable. They are the greatest reward of a life-time spent in the pursuit of knowledge for its own sake."

Growth of science in recent years has been fantastic and beyond our expectations. But today science is also being used unwisely for developing tools of destruction and devastation. For guiding us in the proper use of science we must think of Gandhiji who said, "I will give you a talisman. Whenever you are in doubt or when the self becomes too much with you, apply the following test :

> Recall the face of the poorest and the weakest man whom you may have seen and ask yourself if the step you contemplate is going to be of any use to him. Will he gain anything by it? Will it restore him to a control over his own life and destiny?
>
> Then you will find your doubts and your self melting away."

Science is international and is not confined by political boundaries. Science in India will flourish if we nurture excellence and respect and recognise it. The pyramid, to be stable, must have a sound and broad base. Excellence at the top has to be supported by thousands below. Unfortunately in India the spirit of working together in cooperation with each other is not strong enough. Those who have made significant contributions in science are too much conscious of them. They want to be regarded as unique persons. They do not nurse, support and encourage young people and do not maintain harmonious relations with their equals. Professor Chandrasekhar, the famous Astrophysicist has said, " If you are surrounded by the people who always praise you and if, at the same time, you do not see among your contemporaries people whom you respect yourself, then it has a demoralizing effect." You get used to flattery and open praise. If you are not constantly on guard, you begin to depend on it. Insensitive and rude behaviour by senior scientists towards younger people has a corrupting influence on them. It breeds hypocrisy. In India we cannot admire one person without criticizing someone else. We cannot say, "I like both of them". Our educational system does not instil the enquiring spirit in the minds of our children. A questioning mind is not developed. A scientific mind will question the teacher, which is discouraged in our educational institutions. Our scientific manpower is full of mediocre people. The best scientists find it better to go abroad or to go into management than to get into scientific development or into scientific research. What is needed is we foster the genius of the most talented and develop a sense of hard work and dedication in the entire scientific community. Nothing is worse than the existence of dead wood floating aimlessly in any institution and coming in the way of progress of others.

Technology and Council of Scientific and Industrial Research

The technological and scientific vitality of a country is of great concern today. Economic prosperity, technology and quality of life are intimately linked. Successful exploitation of technology is a prerequisite for strong economic performance. The world is being swept by technological changes which will determine the state of economies and living standards of nations. In India the main foundation of technology is the Council of Scientific and Industrial Research (CSIR). CSIR is a network of 39 laboratories and institutes spread over the whole country. CSIR is celebrating its Golden Jubilee this year.

CSIR's involvement in accelerating industrial development of the country has been in terms of providing technical know-how for upgradation of existing technologies and generating new indigenous technologies in response to emerging needs of industry. The major areas of interest in CSIR during the last decade have been catalysis, drugs, petroleum processing, agrochemicals, electronic control systems for agro-industries and natural products.

In addition to industrially important projects CSIR has also undertaken projects to societal missions as a part of its commitment to application of science and technology for common welfare. These projects relate to safe drinking water, food and nutrition and appropriate technologies for rural areas. CSIR also gives due importance to basic research in order to keep generating new viable technologies and retain a competitive edge.

CSIR contributes in a major way to the manpower development for science and technology. CSIR supports higher education and research in universities through its extramural programmes like junior/senior research fellowship scheme, research associateship scheme, emeritus scientist scheme, pool officers scheme, establishment of centres of excellence and support for organising seminars and symposia. CSIR also funds research projects in universities.

Some More Advice

Sir C.V. Raman has administered a sound piece of advice while addressing young graduates, "I would like to tell the young men and women before me not to lose hope and courage. Success can only come to you by courageous devotion to the task lying in front of you and there is nothing worth in this world that can come without the sweat of our brow. I can assert without fear of contradiction that the quality of the Indian mind is equal to the quality of any Teutonic, Nordic or Anglo-Saxon mind. What we lack is perhaps the courage, what we lack is perhaps driving force which takes one anywhere. We have, I think, developed an inferiority complex. I think what is needed in India today is the destruction of that defeatist spirit. We need a spirit of victory, a spirit that will carry us to our rightful place under the sun, a spirit which will recognise that we, as inheritors of a proud civilization, are entitled to a rightful place on this planet. If that indomitable spirit were to arise, nothing can hold us from achieving our rightful destiny."

It is also quite appropriate to reproduce here a letter which Einstein wrote to an Indian student from Delhi in 1953. This was a reply to a letter from the student. The student wrote to Einstein that he wanted to spend his life in doing research in mathematics and physics, although he was weak in those subjects. Family circumstances forced him to take a job, from which he was dismissed. He wished to pursue research and sought some financial aid from Einstein. Einstein replied,

> "I received your letter and was impressed by your ardent wish to continue to study physics. I must confess, however, that, I can in no way agree with your attitude. We are all nourished and housed by the work of our fellow-men and we have to pay honestly for it not only by work chosen for the sake of our inner satisfaction but by work which, according to general opinion, serves them. Otherwise one becomes a parasite however, modest our wants might be. This is more so in your country where the work of educated persons is doubly needed in this time of struggle for economic improvement.
>
> This is one side of the matter. But there is another side to it, which would have to be considered also in the case that you would have ample means to choose freely what to do. In striving to do scientific work, the chance – even for a very gifted person – to achieve something of real value is very little, so that it would always be a great probability that you would feel frustrated when the age of optimal working capacity has passed.
>
> There is only one way out : Give most of your time to some practical work as a teacher or in another field which agreed with your nature and spend the rest of it for study. So you will be able, in any case, to lead a normal and harmonious life even without the special blessings of the Muses."

Whatever profession you adopt, you must have a dream worth working for. I would encourage you to dream and to have high aspirations. The greatest thing in life is not the achievement but the desire to achieve – it is the striving that is worthwhile. Don't be afraid of doing what you consider right and just. Emerson said, "Do the thing you fear the most and it will be the death of fear itself".

We Congratulate ....

(1) Dr. A.S. Bindra, Head, Department of Horticulture, Punjab Agricultural University, who has been awarded Gold Medal by an International Jury for his most outstanding work on the sub-tropical viticulture and oenology i.e. science of grapevine and wine.

(2) Prof. Vijay Shankar Vyas, Director, Institute of Development Studies, Jaipur, who has been appointed member of the Governing Body of Institute of Development Studies at University of Sussex, England.

(3) Dr. M. Vikram Reddy, Reader in Zoology of the Kakatiya University, who has been awarded 'Environmental Research Fellowship' by the Rockefeller Foundation, to study soil fauna and soil management in Semi-Arid Tropical Agroecosystems in India.

Orientation Programme

The Academic Staff College of Himachal Pradesh University organised recently its four-week tenth Orientation Programme. Inaugurating the programme, Prof. Sagar Sharma, Dean, Faculty of Social Sciences, said that college teachers needed wider exposure to the social problems for purposeful linkage of education with national development. He emphasised the importance of intellectual development for the evolvement of thinking society.

The contents of the programme were selected on the basis of U.G.C. guidelines and specific needs of participants. The needs of participants were identified through various exercises such as Breaking the Ice, Synectics, Sharing and Information Interaction. In order to affect desired changes, an appropriate set of orientational techniques and interaction with Resource Persons were utilised. Some of the orientational techniques utilised were Brain Storming, Fish Bowl, Brain Churning, Group Quiz, Panel Discussion, Reflective Session, Workshop, Teaching Game, Teaching Presentation, Self Management, etc. The participants' teaching was videoised and later shown to them for identifying their weak points and improve accordingly. The participants were given ample exposure to different aspects pertaining to their professional requirements. They were motivated and inspired to assume additional role of teacher as a catalytic agent of change. A special emphasis was given on learning by doing and participation. The participants were made to share the task of management of the programme by involving them at different levels such as chairing, reporting, recording, management of mess, organisation of discussions etc.

Evaluation and monitoring being the integral part of this programme was implemented through multi-strategy approach. Each participant was evaluated against his participation in different forms.

Prof. K.C. Malhotra, Vice-Chancellor, H.P. University, in his valedictory address, said that the teacher had to play a pivotal role in transforming the present day ill-society into a prosperous one for which he had to assume additional role of a guide and philosopher. The training programme galvanize the teachers for assuming additional responsibilities, he added. Prof. Malhotra called upon the teachers to improve their personality by inculcating in them certain qualities such as devotion, integrity, honesty and accountability. He cautioned the teachers against the emerging hostility among different segments of the society against the education system and the educators. Dr. K.K. Gosain, Chairman, Deptt. of Education, H.P. University, was the Coordinator of the programme.

Mysore Varsity Convocation

Dr. Manmohan Singh exhorted the students to ready themselves to work for the restoration of the country's Indianness as its instinctive unity had been threatened by the competitive politics that has raised the caste and communal tensions to a dangerous level.

The Union Finance Minister was delivering the convocation address at the 72nd Annual Convocation of the University of Mysore which is also celebrating its platinum jubilee.

Dr. Manmohan Singh told the university postgraduates that the future of this country was in their hands. But he warned them that what "awaits you when you leave this institution is not all roses". He told them that he was distressed at the strife in Punjab as well as in other parts of the country.

Dr. Singh was lustily cheered first when he was conferred the Honoris Causa degree of Doctor of Literature and when he told them that India had greatest potential of becoming a frontrunner on the world trade and industry scene, provided "we are able to exploit our resources and put them to optimum use. The need is to revive, rediscover and redesign India through economic revolution," he added.

He bemoaned that politics was ceasing to be a vehicle of purposeful social change. Even the industry, he observed, was finding its cosmopolitan character under threat. "A feeling was growing that somehow Indians are inferior to other nations and that we cannot compete with other countries in the global market; this is suicidal", he held.

Dr. Singh assailed the strong protective walls being built to "insulate our economy from outside competition – a major barrier to the realisation of India's tremendous development potential". Referring to the visible signs of erosion of national self-confidence, he stressed the need for strong corrective measures.

Enlightening the students, he said the industrialists in this country are blessed with many advantages which other nations do not enjoy. "Our wage costs are very low. Our food prices are generally still lower compared to other countries. We are among the best cotton producers in the world and our raw materials are much cheaper than the international market. If we make full use of our cheap labour and raw materials available, it is not our industry but our competitors abroad who would need protection,'' he quipped.

He conceded that the small scale industry and the new firms needed cover. But he was against their becoming permanent ''infants''. Asking the universities and other institutions to go in for more and more practical and vocational education he said, the need is to realise the country's development potential in full measure.'' With our manpower and natural resourecs we can capture a considerable share of world market in tropical goods, textile, steel and engineering goods,'' he insisted adding that quality control was a must for making these dreams come true.

He defended the direct foreign investments but was not averse to the fact that large corporations can play a role in spreading the policies of their home country. ''But we should not belittle our ability to protect our interests,'' he suggested. He admitted that the East India Company had acquired control of large part of the East-West trade by means of control of trade routes, ports, centres of production and markets but contented that no multinational can think of coming close to exercising that kind of control. He was for opening doors to the world full of knowledge.

He stressed that creation of knowledge was a global process involving universities, research institutes, industries and inventors, ''We too should participate in this exercise of enormous benefits'', he maintained. Dr. Singh said India needed a strong base in research and development and wanted the facilities for developing this base in the country rather than sending scientists abroad.

The Finance Minister who was described as a lion in the true sense allayed fears that new policy initiatives intended betraying nation. ''They were rather to strengthen resolve for creative self-reliance. Our endeavour is to broaden the arena for our productive forces – to bring the best out of them by raising the level of challenge,'' he contended.

He continued that whatever the intentions of the country's policy makers, their ability to help the poor and the downtrodden is fettered today by low levels of incomes, the limited reach of the State, and absorption of its resources in less deserving uses and political gimmicks. He was all for removing the bias in favour of capital intensity, giving a fairer deal to agriculture, making producers compete for awards. This, he said, was possible through integrated agricultural development, using post harvest technologies, new programmes of rural development, better primary health care, tapping fresh sources of energy and control of environmental degradation.

Summing up he said if India is capable of producing teachers like Dr. S. Radhakrishnan, engineer, statesman of the stature of Dr. M. Visvesvarayya, both products of Mysore University and space scientists like Prof. U.R. Rao and students like B. Kaveri, referring to a girl who won eight gold medals and two cash awards, ''nothing can stop us from becoming world leaders, if our industry, agriculture, banking sector and services are purposefully attuned to the winds of current reforms.''

Innovative Banking

A seminar on Innovative Banking sponsored by the local Rotary Club was recently organised by the Department of Bank Management, Alagappa University, Karaikudi. In his inagural address Dr. K. Nagappan, Vice-Chancellor, asserted that innovation is not a fashion, but a necessity and hence the banking sector has to grow through innovations.

In the forenoon session Mr. Sambantham, Managing Director of the Ind. Bank Housing Ltd. presented a paper on 'Housing Finance'. He highlighted the spectrum of housing finance facilities that are being offered by Indian commercial banks and their subsidiaries. A paper on 'Merchant Banking' presented by Mr. B. Venkateswaran, AGM of the LVB Ltd. exposed the role of merchant bankers in the emerging industrial scenario and enumerated the activities of the merchant banking divisions / subsidiaries. Ms. C. Yogalakshmi, Faculty member, in her paper on 'Mutual Funds' focussed the advantages of investing money in the mutual funds and also presented a detailed account of various kinds of mutual funds and recent guidelines issued by the Finance Ministry regarding the functioning of mutual funds.

In the afternoon session Mr. N. Ramachandran, DGM of the KVB Ltd. presented a paper on 'Credit Cards'. He highlighted the genesis meaning and merits of credit cards. The concept of risk and return in investments and the role played by the investment counsellor in this regard were analysed by Mr. R. Natarajan, Project Executive, Ind Bank Merchant Banking Services Ltd. in his paper 'Investment Counselling'. In his paper on 'Factoring' Mr. N. Krishnakumar, Senior MBM Student threw light on different types of factoring and the problems faced by the factors in India.

Mr. N. Gomathinayagam, Chairman, Bharat Overseas Bank Limited, in his valedictory address stressed the importance of better customer service in banks to introduce a wide range of innovative services.

Buddhism & Its Relevance

A two-day Regional Seminar on 'Buddhism and Its Relevance to the Present Day India' was recently organised by the Gujarat Vidyapith, Ahmadabad. The Seminar was a part of the series of seven regional seminars sponsored by the Ministry of Welfare and coordinated through the Association of Indian Universities, Delhi, in connection with the Centenary Celebration of Dr. B.R. Ambedkar during 1991-92.

Welcoming the delegates, Prof. Ramlal Parikh, the Vice-Chancellor of Gujarat Vidyapith, emphasised the role of Buddhism as a path which aimed at the removal of ignorance and liberation of mind through knowledge – which is also the motto of Gujarat Vidyapith. Prof. Mahesh Tiwary, Professer of Buddhist Studies, University of Delhi, in his inaugural address, stressed upon the universal message of ethical – moral values in Buddhism while Advyavajra – Dr. K.H. Gottmann (Arya Maitreya Mandal, West Germany), in his Address as the chief guest, traced the development of Buddhism in the West and highlighted the role of Buddhism as a peaceful integrating force. 39 papers presented in the Seminar were covered under six different sections of Philosophical Enquiries, Ethics & Values, Buddhism in Modern India and Dr. Ambedkar & Buddhism, Sciences & Meditation, and Buddhism, Non-Violence and Peace. An Exhibition of Buddhist Relics from Gujarat was also organised on the occasion.

Fortysix delegates from universities and research institutions, primarily from the region, belonging to the varied disciplines of Languages and Philosophy, History, Culture & Archaeology, Social Anthropology, Value-based Education, Psychology, Sciences and Medicine, Peace Studies along with the practising Buddhists from the local Buddhist Organisations participated in the Seminar.

Sanskrit University for HP

The Himachal Government is reported to have decided to set up a Sanskrit Vidyapeeth in Una district. This was revealed by Mr. Radha Raman Shastri, Education Minister, while presiding over the concluding function of the second annual Sanskrit colleges sports meet at Kangra recently.

The Vidyapeeth, which will be eventually upgraded to a Sanskrit University, will have facilities for carrying out research and teaching in Vedic literature, astrology and ayurveda. It will have centres in various parts of the State. Some of them will be set up at places like Jwalamukhi, Chamunda and other temple towns where Sanskrit classes were already being held.

The establishment of a Vidyapeeth would go a long way in promoting the ancient language.

New Fellowships

The University Grants Commission (UGC) has announced the institution of eight national fellowships to teachers of outstanding eminence from higher education system. Vice-Chancellors of universities have accordingly been advised to send nominations of suitable teachers by June 30, 1992, for the fellowships.

The national fellowships are offered to professors and readers of 55 years age or less to enable them to take a year or two off from normal duties for engaging themselves in research and to write the results of the same.

New Courses

The University of Bangalore plans to offer a postgraduate diploma course in tourism in the coming year. The University would also like to open a Railway Management Institute where the railway staff would get good training.

According to the Vice-Chancellor, Prof. K. Hanumanthappa, the proposal in this regard has been sent to Railway Minister, Shri Jaffer Sharief.

Outlining a proposal to takeover the postgraduate courses in Home Science run by the VHD Institute of Home Science, the Vice-Chancellor said a sum of Rs. 10,00,000 has been provided in the year 1992-93, for this purpose.

The University has also decided to start M.Sc. (Nursing) medical and surgical nursing and M.Sc. (Nursing) community health nursing courses.

IISc, ISRO to Collaborate

The Indian Space Research Organisation (ISRO) and the Indian Institute of Science (IISc) have signed a protocol to collaborate in research in advanced space technology.

Under the protocol, ISRO and IISc will jointly establish an advanced space technology laboratory at the IISc to carry out frontline research in several areas like signal processing, aerodynamics, propulsion, cryogenics, composites and materials.

The protocol was signed by Director of the IISc, Prof. C.N.R. Rao and Chairman of ISRO, Prof. U.R. Rao.

Computer Aided Casting Design

The Ministry of Human Resource Development, Government of India, has sanctioned a Plan Scheme project titled Computer Aided Casting Design and Manufacture with an outlay of Rs. 10.00 lakhs to the Indian Institute of Technology, Madras. Prof. H. Md. Roshan of Metallurgical Engineering Department is the Coordinator.

Nature Care Institute

The former Prime Minister, Mr.Morarji Desai, who is Chancellor of the Gujarat Vidyapith, has presented a cheque of Rs 25 lakhs to the Vidyapith for setting up an institute for scientific research in nature cure.

News from Agricultural Universities

HAU Jobs to be Pensionable

The Board of Management of Haryana Agricultural University is reported to have accepted in principle a scheme to make all jobs in the university pensionable.

Besides making university jobs more attractive, the scheme when implemented would facilitate later movement of university personnel from one university to another university and to the Indian Council of Agricultural Research.

The Board also accepted a proposal to give a best teacher award every year both at the university level as well as the level of different constituent colleges.

The rules for grant of study leave have been relaxed. Teachers appointed after May 1, 1987, will now be eligible for study leave. The period of such leave, which was hitherto not counted towards qualifying period of service for promotion, would now be taken into consideration up to a maximum of three years. Likewise, teachers who execute a bond to serve the university at least for the period of their study leave would now be able to quit their jobs and the university would deduct only the amount proportionate to the remainder of the bond period.

Technical staff of the university will also be eligible now for study leave. This will enable them to improve their professional skills and qualifications.

The university would also set up a separate college of agricultural engineering from the next academic session. A new course – master of agricultural business management – would also be introduced from the next session.

News from Abroad

UNESCO Chairs for Varsities

UNESCO has launched a Unitwin programme which includes the setting up of UNESCO chairs in various universities of the world.

At least 15 chairs are already operational and about 30 others, some of them to be inagurated this year are in various stages of preparation, it is reported.

Unitwin and its UNESCO chairs scheme seeks to bolster cooperation among universities of the world and create centres of excellence where postgraduate students and researchers engage in advanced training and research in areas identified as crucial to the development of their regions.

In Asia, the universities involved are in India, China, Indonesia, Iran, Japan, Pakistan and Thailand. The fields of study cover plant genetics, demography, chemistry, biology, rational use of drugs, industry, environment and health studies, technology, higher education research and sustainable development.

Inter-sectoral and inter-agency cooperation programme for promoting university training and research on population issues has been prepared and will be discussed with the United Nations Fund for Population Activities (UNFPA). The programme includes networking of universities.

Another University for Malaysia

Malaysia is to establish an eighth university at Kuching in Sarawak, the education ministry has announced.

Datuk Amar Dr Sulaiman Daud, the education minister, said detailed proposals for the institution have been drawn up by a technical committee and will be presented to the cabinet shortly.

The Sarawak State Goverment has already allocated a large site for the university and, in order to speed up its establishment, a Vice-Chancellor designate and staff will operate from the University of Pertanian Malaysia campus.

Malaysia's other seven universities are the University of Malaya, University Kebangsaan Malaysia, University Sains Malaysia, University Technology Malaysia, University Pertanian Malaysia, University Islam Antarebangsa and University Utara Malaysia. Together they admit about 10,000 undergraduates annually.

Australian Education Export Industry

A massive programme by Australia's universities to market higher education courses overseas is sharply expanding as institutions begin to set up their own campuses in Asia.

The education export industry has become Australia's fastest growing income earner and is believed to be worth more than A$ 1,000 million a year. This year, more than 65,000 foreign students will enroll in education courses in Australia and a majority will pay high fees.

But now universities have decided to tap into the local market by establishing home-based campuses where students can complete the first one or two years of a degree and then finish the course in Australia. In some cases, students will complete their entire studies at home but will graduate with an Australian qualification.

The Royal Melbourne Institute of Technology (RMIT) and the Singapore Institute of Management signed an agreement last September to jointly offer a Masters in Finance degree in Singapore. It will be the only specialist postgraduate degree in finance available in Singapore. As well as regular visits by RMIT staff to the Singapore students, the institute's business lecturers will also make contact via newly-installed video conferencing technology in Melbourne.

The Victoria University of Technology in Melbourne, is running a graduate diploma in computer science at the Hong Kong Polytechnic.

La Trobe University is running on and offshore courses for overseas students and last August held its first degree presentation ceremonies in, Kuala Lumpur and Hong Kong. In Malaysia the Vice-Chancellor, Professor Michael Osborne, presented degrees to 38 local graduates, after a similar presentation in Hong Kong to 17 new degree-holders.

In the latest moves, Monash University in Melbourne and the University of Sydney are planning substantial off-shore centres in Malaysia. Sydney's Penang International Education and Technology Centre will be a A$30 million venture offering full-fee courses in economics, engineering and business administration.

Maths and Women Don't Add Up

Lack of encouragement from teachers, family and peers may be a key factor responsible for the low numbers of American women earning advanced degree in mathematics and physics, according to a study conducted by the University of Michigan researchers.

The report, released last week, tried to learn why United States institutions awarded only 18 percent of their mathematics PhDs and 9 percent of physics PhDs to women. "The small numbers of women studying graduate level mathematics is especially puzzling, because men and women graduate (from college) with math majors in roughly equal numbers nationwide," said D.J. Lewis, a University of Michigan mathematics professor who led the investigation.

Based on surveys of 249 Michigan students and a review of similar studies at other universities, Lewis' group found no significant difference between male and female undergraduates in intelligence, grades, high school preparation, or innate ability to handle a demanding mathematics or science curriculum.

The study did uncover major differences in the way men and women perceive their own abilities and their educational environment, Lewis said, adding, "Something in our culture makes even highly intelligent, qualified women doubt they can do serious mathematics or hard science."

One element of that "something" is a competitive, impersonal institutional structure that does not support women's needs, according to Carol Hollenshead, director of the UM Center for Education of Women and co-investigator of the study.

"It is important not to see this as a 'women's problem'," Hollenshead said. "Lack of self-confidence must be viewed in the context of signals women students receive from their environment, the culture at large, their families and predominantly male faculty and peers."

The Michigan study found; that women were much more sensitive to a lack of positive reinforcement from faculty and peers than men. Men reported a higher incidence of active encouragement from faculty than did women and female students were very likely to cite encouragement from parents or faculty as a factor in their decisions to pursue advanced degrees in mathematics or physics.

France Scraps Communication Courses

Communication Studies are to disappear from the first two years of university courses in France under government reform plans, despite their popularity among students.

Communications courses will not even form a subsidiary component of the core diploma subjects which are to be cut down from 48 to 12 under the proposals. Claude Allegre, the ministry's top official in charge of higher education, defended the decision claiming the courses are "an unemployment factory".

Around 12,000 students are on communication courses mostly hoping to enter journalism, advertising or public relations. But employment prospects in these sectors are at an all-time-low.

The French jouralists' union which monitors job offers, said that for the first time there has been a week in which only one job in journalism was advertised anywhere in France.

Francoise Pecaut, president of Avignon university, who fully backs the ministry's concern about unemployment in the sector, plans to set up a compromise system whereby a small number of students would be selected after the first year.

"After the first year of the diploma course, about 50 students would be chosen after tests and would have communications modules in their second year as a preparatory step towards a communications degree," she said.

This formula would have to be negotiated with the education ministry.

BOOK REVIEW

Mental Health and Teachers

Meenakshi*

Surya Nath Prasad. Mental Health of Teachers. New Delhi, Gian Publishing House. 1990. Pp 150. Rs. 100.

In a book titled "Mental Health of Teachers" a reader normally expects some serious discussion on concepts and theories of mental health as related to teachers besides why and how of recruiting and maintaining mentally healthy teachers in our educational institutions. Unfortunately the book under review, which is a Ph.D. thesis, has very little to offer in this direction.

The book talks of only maladjusted teachers and the use of non-directive approach of psychotherapy as developed by Carl R. Rogers to assist such teachers to cope with their present and future difficulties. The study is restricted to only 40 pupil teachers identified as maladjusted from a total group of 110 B.Ed. trainees of Janta College of Education, Chandrapur, Maharashtra, by the administration of the Hindi version of Scheier and Cattell diagnostic test called Neuroticism Scale Questionnaire (NSQ). According to the author in a population of 110 pupil teachers admitted to a college for a B.Ed. course as many as 39% suffer from some maladjustment or the other. The figure looks to be on the high side and is thus really horrifying. The reviewer's reaction is that either the word maladjustment does not clearly describe what the test (NSQ) actually measures or there is something wrong in the administration of the test or the college is so unlucky that very many maladjusted students join it.

The interesting part of the book is the one which contains description of the experiment made on the maladjusted group of teachers. These forty teachers were divided into two groups of 23 and 17 teachers respectively and given the names of the therapy or experimental group and no-therapy or control group. The experimental group was given therapeutic interviews as described in the non-directive approach formulated by Carl R. Rogers. In this approach the burden lies in making the subject identify his problem and speak it out. The researcher tries to raise the client's esteem or self assurance and develop positive attitudes towards himself and reject and avoid negative feelings. Such subjects as failed to attend all the therapeutic interviews or were found to be non-serious were put in an attrition group different from the continuers group. Counselling interviews were given individually to all members of the continuing group. When the one year therapy programmes were over, the control group, the attrition group and the continuing group were once again administered the Neuroticism Scale Questionnaire to find the incidence of maladjustment among the members of the three groups and to find the impact of therapy interviews, collective as well as individual, on the members of the experimental group. The study reveals, as was perhaps expected, that the experimental group improved significantly (.01 level of confidence) during therapy while there was no improvement in control group due to absence of therapy. It was further seen that male members of the experimental group improved more than their female counterparts whereas female members were found to be more submissive, obedient and dependent than males; the males were more sensitive and emotional and slightly more serious than females. The therapy interviews largely reduced the anxiety level of the members of the experimental group and improved their adjustment level also.

Clearly the study under discussion has a limited scope and being small, just 14, the results of the study do not lend themselves for wider application or for any dependable generalization. The author has himself suggested that the stuty may be replicated on a large sample in order to ensure superior validity for the findings and to correctly assess the incidence of maladjustment in teachers.

Another useful part of the book is a fairly comprehensive bibliography given at the end. I wish the author had been a little more mindful of the necessity of a good language in a treatise of this nature.

I join Dr. John Paul Eddy who has contributed a Foreword to this book in recommending this book for both counsellors and teachers. The price of the book is surely on the higher side.

Lecturer, Deptt. of Education, Punjabi University, Patiala.

Reforming Higher Education

I have gone through Prof. V.M. Dandekar's 'Reforms in Higher Education' (R.S. Dubhashi Memorial Lecture) and Prof. J.N. Kapur's 'Reforming Higher Education' appearing in the *University News* of 25th November '91 and 9th March '92 respectively with pleasure and seriousness. Both the articles deserve attention and scanning of teachers and academicians.

The concern of Prof. Dandekar for the present state of higher education in our country is genuine, I feel. He claimed to have considered two things: (i) how to make the teachers in the colleges and the universities more accountable for their duties, and (ii) how to make students more responsible? But the clinical study with Adam Smith's two century old apparatus and reagents without taking into account the capacities and capabilities of vast Indian masses, their socio-economic conditions and aspirations, will be of little use. We cannot probably see and interpret the existing educational scenario with Smith's spectacles. Yes, most of the teachers need enhancement of competency, updating of knowledge and skill, integration of their wisdom with different branches of knowledge and life of people. Also, they need improvement of their sense of accountability towards students, society and government. But all these do not necessarily lead us to treat higher educational institutions as units of big private industries to crush what Prof. Dandekar mentioned repeatedly as 'monopoly' of teachers. His 'radical reform' includes:

(a) Govt. grants to the universities and colleges, staff strengths and salary scales etc. should be frozen at their present level.

(b) Existing teachers will be allowed to continue with the present pay scales terms and conditions of service and these will not be revised any more whatever be the prices and whatever be the revisions in the pay scales and conditions of services in govt. and other places.

(c) A teacher should charge and collect fees from the students attending his course of lectures and a part of such fees (half to one-third) will go to the govt., another part will go to the college/university as rent for facilities it provides and residual portion to the teacher to provide 'sufficient incentive' for him. Gradually he will shift from salaried to the 'professional style of existence'.

(d) The govt. shall not sanction any new university or college with any sanctioned staff nor shall sanction new positions of teachers in existing universities or colleges.

(e) All new entrants to the teaching profession shall earn their living from the fees which the students shall pay.

(f) New universities and colleges, if opened, will have no sanctioned posts of teachers.

(g) Funds saved from 'progressive reduction' in number of salaried teachers as also new and additional funds provided for higher education will be used mainly to give loan scholarships to the students.

These suggestions are dangerous and also detrimental to the cause of higher education in a developing country like India. It appears that Prof. Dandekar has taken extreme view of the present state of affairs and propagated openly and eloquently full privatisation and commercialisation of education without considering the economic, social and cultural conditions of the poor people of India. No educationist of this country has ever been found to regard education as a market commodity produced in factories nor anyone thought of converting colleges and universities into costly private nursing homes/hospitals where doctors charge high from the ailing patients. Probably World Bank and International Monetary Fund will feel happy and big powers will invest money to earn profit from this new industrial sector.

Prof. J.N. Kapur's article titled 'Reforming Higher Education' (*University News*, 9th March 1992) is indeed thought-provoking as it contains practical suggestions some of which have been tried in some form or the other, sometimes partly, in different universities and others are yet to be given a fair trial. The first ten suggestions for improvement of academic standards and excellence of institutions are in conformity either with the recommendations of several education commissions set up in our country or with the findings of researches and experiments done in the East and the West. But the suggestions for improvement of financial conditions of the colleges/universities by charging higher fees from students or by imposing 'graduate taxation' on the income of graduates seem untenable in the present conditions of our country when majority of our student population belong to poor and lower middle class families and employment opportunities have been narrowed down. Many industries are facing the threat of goodbye policy, closure, lock out etc. The Centre has declared a policy of scaling down the number of employees in various departments. So, the suggestion for imposing higher fees and graduate taxation will be an attack on the people.

Suggestions for raising funds through consultation service by the universities from industries and organisations like Defence Research Development Organisation sound well. One will agree with Prof. Kapur that the external examination system wastes much of our time, fund and energy. Flexibility of curriculum and real academic transaction in the institutions should be increased. But teachers cannot be made more accountable by adopting aggressive means like freezing of salary, or by giving them free licence to charge high fees from students as some greedy surgeons and lawyers do. Again, students cannot be made to study hard and avoid rowdyism by imposing high tuition fees only. Education can survive and prosper in an atmosphere of goodwill and sound understanding between teachers and students. Government and society will provide opportunities to the students and the teachers in the interest of the people and civilization. Education cannot be equated to commercial transaction.

Dilip Kumar Dey
Teacher's Training College,
Silchar - 788005, Assam.

CALENDAR OF EVENTS

Proposed Date of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/ Officer to be Contacted
May 11-30, 1992	Summer Institute on the recent trends in the diagnosis and management of the diseases of the livestock and companion animals utilising modern clinical diagnostic equipments	To bring about the qualitative improvement and to update teachers and extension specialists in the field of veterinary medicine and other clinical subjects	Clinical Medicine and Therapeutics, Madras Veterinary College, Tamil Nadu Veterinary and Animal Sciences University, Madras	Dr. P. Dhanapalan, Professor & Head, Clinical Medicine and Therapeutics, Madras Veterinary College, Tamil Nadu Veterinary and Animal Sciences University, Madras - 600 007
June 6-7, 1992	Fifth Annual Conference of All India Association for Educational Research	Theme : Quality Improvement in Educational Research	Department of Education, Shivaji University, Kolhapur	Dr. R.B. Dewasthalee, Head, Department of Education, Shivaji University, Kolhapur-416004
August 11-16, 1992	8th World Congress for Rural Sociology	Theme : Rural Society in the Changing World Order	International Rural Sociology Association, USA	The Pennsylvania State University, 306, Agricultural Administration Building, University Park, Pennsylvania - 16802
August 16-19, 1992	55th Annual Meeting of the Rural Sociological Society	Theme : Rurality and the Global Environment	Rural Sociological Society, USA	-do-
August 25-28, 1992	Second Afro-Asian Psychological Congress	Theme : Psychology for Social Development and Human Welfare	The Chinese Psychological Society	Prof. Wang Su, Congress Secretariat, Department of Psychology, Peking University, Beijing-100871
August 26-28, 1992	Second International ISKO Conference on Cognitive Paradigms in Knowledge Organisation	To provide a forum for scholars working in the field of knowledge organisation	Madras Library Association in collaboration with Sarada Ranganathan Endowment for Library Science and University of Madras	Mr. S.N. Kumar Conference Secretariat, 5, Sivaganga Road, Madras-600 034
September 21-23, 1992	Sixth Annual Conference of the Asian Association of Open Universities	Theme : The Role of Open Universities in promoting Education for All	Korean Society for the Study of Distance Education	Dr. In Sung Jung, Secretariat, AAOU 1992 Annual Conference C/O Korea Air and Correspondence University 169, Dongsung-Dong, Chongro-Ku, Seoul 110-791, Korea

INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

VACANCIES FOR MUSLIM ACADEMIC STAFF

Minimum requirements: In most cases Ph.D. preferably with experience as Assistant Associate or Full Professor. In some cases a Masters' qualification particularly in Business, Accountancy and Law is acceptable if accompanied by relevant experience. Fluency in English is essential as all classes, apart from some Islamic subjects, are conducted in English and even in such cases ability to communicate in English is an advantage.

LAWS: Islamic Legal System; Constitutional Law; Law of Contract; Islamic Constitutional Law; Law of Torts; Family Law; Criminal Law; Islamic Criminal Law; Transactions in Islamic Law; Land Law; Company Law; Equity & Trusts; Commercial Law; Islamic Jurisprudence (Usul al-Fiqh); Civil Procedure; Criminal Procedure; Evidence; Evidence & Procedure in Shariah Court; Jurisprudence; Usul al-Fiqh (Advanced); International Trade and Shipping Law; Banking and Negotiable Instruments; Islamic Family Law; Islamic Legal Maxims (al-Qawa'ld al-Fiqhlyyah); Ayat Wa al-hadith al-Ahkam; al-Fiqh al-Muqaran.

ECONOMICS: Well acquainted with quantitative methods and specialisation in any of the following: Environmental and Urban Studies; Energy Economics; Industrial Economics; Resource Economics; Mathematical Economics.

ACCOUNTING: Financial Accounting; Taxation; Auditing; Company Accounting; Company Law.

BUSINESS ADMINISTRATION: Marketing; Finance; Information Technology; Management Science; Production Management; Human Resource Management; Organizational Behaviour.

POLITICAL SCIENCE: International Relations/Organizations; Comparative Politics and Government; Political Theory and Philosophy; South-East Asia (Asean Area).

PSYCHOLOGY: Experimental Psychology; Psychometrics; Social Psychology/Personality; Industrial Psychology/Organizational Behaviour.

HISTORY: South-East Asia History; History of Central Asia and Caucasus.

COMMUNICATION: Print Journalism; Public Relations and Advertising.

SOCIOLOGY & ANTHROPOLOGY: Theories and Methods of Sociology and Anthropology; Social Sciences from Islamic Perspective; Sociology and Anthropology of Development and Change; Area studies esp. with regard to Muslim Communities in different countries; Population Studies.

PHILOSOPHY: Metaphysics and Epistemology (Western and Muslim); Logic; Ethics/Social and Political Philosophy; Muslim Philosophy (with good knowledge of Medieval Philosophy); Contemporary Anglo-American Thought; Contemporary Continental Philosophy.

ISLAMIC REVEALED KNOWLEDGE & HERITAGE: Applicants must be able to teach in both English and Arabic Tafsir; Hadith; Fiqh & Usul al-Fiqh Aqldah; Comparative Religion; Da wah.

LIBRARY & INFORMATION SCIENCE: Minimum Requirements: Applicants must have both teaching and professional experience with a good research and publication record and excellent English proficiency.

Technical Services (applicants should have qualifications and experience in cataloguing with DCC, LC, AACR2, LSCH, SLSH, use of bibliographic utilities, indexing and abstracting, specialised treatment of Arabic and Islamic materials).

Information Technology Applications (applicants should have qualifications and experience in information storage and retrieval, information processing, database management, management of automated systems, telecommunications, networking, microcomputer applications, vocabulary control, bibliomatrics).

EDUCATION: Minimum Requirements: All applicants for a position in the Department of Education should, as well as holding a doctoral qualification **in the specific field for which they are applying** also hold a Diploma of Education and have had relevant experience and supply evidence of the ability to teach their subject from an Islamic perspective.

M.Ed. Programme: Advanced History and Philosophy of Education; Measurement and Research Methodology; Issues in Arabic Teaching Methodology; Arabic Literature and Text Analysis; Text Book Development of Teaching Arabic; Issue on Methods of Teaching Islamic Education; Curriculum of Islamic Education; Advanced Social Foundations of Islamic Education; Advanced Psychological Foundations of Islamic Education.

VACANCIES FOR LIBRARIANS:

Minimum Qualifications: Masters' Degree in Library and Information Science and at least 5 years' post-Master's relevant experience in the areas of automated cataloguing, collection development and reference services. Fluency in Arabic and English is required.

When applying send complete resume, copies of qualifications, recent photo, telephone number and availability (the academic year begins in the first week of July and ends in mid-April of each year).

Application forms can be had in India from :

Institute of Objective Studies
Post Box No. 9725, Jamia Nagar,
New Delhi - 110 025.

Request for application forms should accompany with a self-addressed (Rs. 2/- stamped) 11 x 25 cm. envelope.

ADDITIONS TO AIU LIBRARY

Abid Husain, S. **National culture of India.** New Delhi, National Book Trust, 1985, ix, 181p.

Agarwal, B L. **Basic statistics.** Delhi, B R Pub. Corp., 1979. xxiii,211p.

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Austen, Mark. **WordStar 5.0 and 5.5.** New Delhi, Galgotia Pub., 1991. 96p.

Azad, J L. **Graduate unemployment in India: An analytical studyof its incidence, nature & causation.** New Delhi, AIU, 1991.xi, 154p.

Behram,S C. **Educational television programmes: Impact on teachers competency.** New Delhi, Deep & Deep, 1991. xii, 248p.

British Council. National Academic Recognition Information Centre. **International guide to qualifications in education. Ed. 3.** London, Mansell, 1991. xiv, 719p.

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Desai,Uday. **UniversityVice Chancellors:Profilesin leadership.** Delhi, Hindustan Pub. Corp., 1991. ix, 115p.

Dheer, S and Kamal, Radhika. **Organisation and administration of physical education.** Delhi, Friends Pub., 1991, xi, 406p.

Gurdip Singh. **Global environmental change and international law.** New Delhi, Aditya Books, 1991. xv, 184p.

International Association of Universities. **International University co-operation: A critical analysis failures, successes, perspectives.** Paris, Unesco House, 1989. x,104p.

Jagmohan. **My frozen turbulence in Kashmir.** Delhi, Allied Pub., 1991. xv, 723p.

Kakani, S L & Parakh, N C. **Guide to careers for science students.** New Delhi, Sultan Chand & Sons, 144p.

Karan Singh. **Brief sojourn: Seven months as Ambassador to the United States.** New Delhi, B R Pub. Corp., 1991. 161p.

Klausmeier, Herbert J and others. **Wisconsin Centre for Education Research: Twenty-five years of knowledge generation and educational improvement.** Wisconsin, Wisconsin Centre for Education Research, 1990.

Kundu, C L. **Adult education: Principles, practice & prospects.** New Delhi, Sterling Pub., 1986. xiv,215p.

Mathew, E T. **Financing higher education: Sources and uses of funds of private colleges in Kerala.** New Delhi, Concept Pub. 1991.164.

Mishra, R S. **How I faced an invited trouble.** Lucknow, Prakashan Kendra, 1988. xx,143p.

Nayak, G C, Ed. **Nehru and Indian culture.** Puri, Shri Jagannath Sanskrit Viswavidyalaya, 1991. 73p.

Nayar, D P. **Towards a national system of education: Educational development in India, 1937-51.** New Delhi, Mittal Pub., 1989. 435p.

Nayar, Sobhana. **Bhatkhande's contribution to music.** Bombay, Popular Prakashan, 1989. xvi,362p.

Rao, K N & Ahluwalia, S S. **Mandal report X-rayed.** New Delhi, Eastern Books, 1990. 248p.

Singh, Raja Roy. **Education in Asia and the Pacific.** Bangkok,Unesco, 1986. xiv, 215p.

Sulochana, M. **Financial management of higher education in India.** Allahabad, Chugh Pub., 1991. ix, 371p.

Tanenbaum, Andrew S. **Computer networks.** New Delhi, Prentice-Hall of India. 1985. xv,517p.

Uday Shanker. **Advanced educational psychology.** New Delhi,Oxonian Press, 1984. vi, 608p.

RESEARCH IN PROGRESS

A list of Research Scholars registered for Doctoral Degrees in Indian Universities

SOCIAL SCIENCES

Journalism

1. Pradhan, Anand Kumar. **Mudri madhyam aur atankwad: Panjab sankat ke sandarbh mein.** BHU. Dr B R Gupta, Department of Journalism, Banaras Hindu University, Varanasi.

2. Singh, Arvind Kumar. **The role of media in education.** BHU. Dr B R Gupta, Department of Journalism, Banaras Hindu University, Varanasi.

3. Singh, Avadh Bihari. **Development communication at grass root level.** BHU. Sri H A Azmi, Department of Journalism, Banaras Hindu University, Varanasi.

4. Singh, Gopal. **News-objectivity: Doordarshan Vs newspapers: A study of Indian scenario.** BHU. Dr B R Gupta, Department of Journalism, Banaras Hindu University, Varanasi.

5. Srivastava, Amar Nath. **News pool coverage in Indian press.** BHU. Shri H A Azmi, Department of Journalism, Banaras Hindu University, Varanasi.

Psychology

1. Chaudhary, Raj Bahadur. **A study of sex differences on intelligence, creativity and academic achievement among school children.** BHU. Dr Reeta Verma, Department of Psychology, Banaras Hindu Uniersity, Varanasi.

2. Rezaei, Azarmidokhat. **Arousal, personality and performance.** BHU. Dr B S Gupta, Department of Psychology, Banaras Hindu University, Varanasi.

3. Singh, Rajkumar. **Monotony, bordome as related of personality and mental health of library professional.** BHU. Dr Reeta Verma, Department of Psychology, Banaras Hindu University, Varanasi.

4. Srivastava, Rekha. **Organizational climate and performance.** BHU. Dr A P Singh, Department of Psychology, Banaras Hindu University, Varanasi.

5. Yadava, Jai Nath. **Job performance in relation to job attribution and mode of coping.** BHU. Dr A K Srivastava, Department of Psychology, Banaras Hindu University, Varanasi.

Sociology

1. Assakumari. **The dowry system among Nayars in Kerala: A sociological study.** Kerala. Dr (Miss) Mariamma Joseph, Prof (Retd), Loyola College, Thiruvananthapuram.

Social Work

1. Kakade, Vilas Baburao. **A study of implementation of Employees State Insurance Scheme in textile mills of Solapur City with special reference to the Laxmi Vishnu Textile Mills Ltd., Solapur.** Shivaji. Dr A D Madulkar, Chhatrapati Shahu Central Institute of Business Education and Research, Kolhapur.

2. Lawani, B T. **Voluntary organisations in Kolhapur District: A social work study.** Shivaji. Dr M S Makandar, Walchand College of Arts and Science, Solapur.

3. Patil, Bajirao Shivagaunda. **A study of origin, development and working of trade union movement in Kolhapur and adjoining areas.** Shivaji. Dr A D Madgulkar, Chhatrapati Shahu Central Institute of Business Education and Research, Kolhapur.

4 Patil, Ramagonda Hari. **Trade unions in Kolhapur District: A social work study.** Shivaji. Dr M S Makandar, Walchand College of Arts and Science, Solapur.

Political Science

1. Pandey, Jai Prakash. **Prospect of journalism in IIIrd world.** BHU. Dr P Upadhyay, Department of Political Science, Banaras Hindu University, Varanasi.

2. Ranveer Singh. **Electoral politics in East U P.** BHU. Prof P D Kaushik, Department of Political Science, Banaras Hindu University, Varanasi.

3. Thomas, P J. **The role of welfare-programmes in the political socialisation of scheduled tribes in Attappady in Kerala.** Kerala. Dr N Jose Chander, Director, Institute of Correspondence Courses, University of Kerala, Kariavattom.

Economics

1. Arya, Dharmendra Nath. **Some aspects of dynamics of inflation in India.** BHU. Prof D K Srivastava, Department of Economics, Banaras Hindu University, Varanasi.

2. Bhowmick, Devjeet. **Population growth and food supply in India.** BHU. Dr A R Prasad, Department of Economics, Banaras Hindu University, Varanasi.

3. David, Neeta. **Economics of urban housing: A case study of Ujjain City.** Vikram. Dr (Smt.) S Murthy, Prof, School of Studies in Economics, Vikram University, Ujjain.

4. Garg, Devendra. **State Bank of India and agricultural development with special reference to Sagar Division, 1981-1991.** H S Gour. Dr M L Tripathi.

5. Joshi, Sanjeev. **High powered money and the organized credit market in India.** BHU. Prof G D Mishra, Department of Economics, Banaras Hindu University, Varanasi.

6. Pandey, Chanchal Kumar. **The role of Thermal Power Stations in regional economic development with special reference to Shaktinagar, Mirzapur, U P.** BHU. Prof G D Mishra, Department of Economics, Banaras Hindu University, Varanasi.

7. Pandey, Vinod Kumar. **Steel industry in India: A case study of TISCO.** BHU. Prof P K Bhargava, Department of Economics, Banaras Hindu University, Varanasi.

8. Rathaur, Sadhana. **Growth of public expenditure in India since 1951.** BHU. Prof U K Mehra, Department of Economics, Banaras Hindu University, Varanasi.

9. Sanjai Kumar. **Tourism industry in India.** BHU. Dr (Miss) I Jain, Department of Economics, Banaras Hindu University, Varanasi.

10. Sen, Kakoli. **Indo-Bangladesh economic relations.** BHU. Dr M P Singh, Department of Economics, Banaras Hindu University, Varanasi.

11. Singh, Ajay Kumar. **Bharat mein laghu udyogon kee samasyayen tatha vikas kee sambhavnayen.** BHU. Dr (Mrs) Kiran Berman, Department of Economics, Bananras Hindu University, Varanasi.

12. Singh, Jitendra Kumar. **Employment in agriculture: A case study of Chakia Block of Varanasi District.** BHU. Dr I Jain, Department of Economics, Banaras Hindu University, Varanasi.

13. Singh, Vijay Narayan. **Buxar Vikas Khand mein laghu evam kutir udyogon ka ek adhyayan.** BHU. Dr R P L Jain, Department of Economics, Banaras Hindu University, Varanasi.

14. Trivedy, Raghav Kumar. **The role of cooperative finance in agricultural development.** BHU. Prof P K Bhargava, Department of Economics, Banaras Hindu University, Varanasi.

Law

1. Sheikh Mohd Nizam. **The development of social action litigation in India: Problems and perspectives.** BHU. Dr G P Verma, Department of Law, Banaras Hindu University, Varanasi.

Education

1. Ashutosh Kumar. **Voluntary efforts in adult education in Bihar.** Jamia. Prof Mohd Miyan and Prof R P Singh.

2. Jyothis Chandran, G. **A comparative study of the performance of secondary school students in three different branches of science.** Kerala. Dr P Viswanathan Nair, Lecturer, Department of Education, University of Kerala, Thiruvananthapuram.

3. Saini, Namita. **A study of sports competition, anxiety, sports achievement, motivation and vigilance across gender and levels of performance of teen athletes in the age group of 17 to 22 years.** Panjab. Shri Gurbaksh Singh Sandhu, Reader, Department of Physical Education, Panjab University, Chandigarh.

4. Sood, Indu. **The effectiveness of computer aided instruction on achievement in science in relation to classroom environment and study habits at the school stage.** Panjab. Dr N N Pangotra, Director, Centre for Adult, Continuing Education and Extension, Panjab University, Chandigarh.

Commerce

1. Bhupesh Singh. **Job-satisfaction and role stress as a function of personality and organisational climate: Comparative study of professionals and non-professionals.** HP. Dr (Mrs) Sadhna Mahajan, Department of Management Studies, Himachal Pradesh University, Shimla.

2. Rai, Satish Chandra. **Madhya Pradesh Rajkiya Sarak Parivahan Nigam: Ek Mulyankan.** BHU. Dr O P Rai, Department of Commerce, Banaras Hindu University, Varanasi.

3. Upadhyaya, Rekha. **Inter corporate financing in India: A**

study of trends and prospects. BHU. Dr K M Pandey, Department of Commerce, Banaras Hindu University, Varanasi.

HUMANITIES

Philosophy

1. Mishra, Dhananjay. **Mahatma Gandhi ke samajik aur rajnaitik darshan ka sameekshatmak adhyayan.** BHU. Dr U C Dubey, Department of Philosophy and Religion, Banaras Hindu University, Varanasi.

2. Mishra, Raman Nath. **Vedic kaleen shiksha darshan kee samkaleen prasangikta.** BHU. Dr R R Pandey, Department of Philosophy and Religion, Banaras Hindu University, Varanasi.

3. Pandey, Vinit Kumar. **Adhunik Bhartiya chintan mein manavwad.** BHU. Dr U C Dubey, Department of Philosophy and Religion, Banaras Hindu University, Varanasi.

4. Rai, Mahendra Narain. **Dekarta evam sankhya mein chitta achitta kee samasya.** BHU. Dr Munni Agrawal, Department of Philosophy, Banaras Hindu University, Varanasi.

5. Rai, Shailendra Kumar. **Bhartiya darshan mein sukh aur dukh nivritti: Ek vivechnatmak adhyayan.** BHU. Prof R R Pandey, Department of Philosophy and Religion, Banaras Hindu University, Varanasi.

6. Singh, Amrendra Kumar. **Pashchatya darshan mein anishwarvad kee sameeksha.** BHU. Dr Munni Agrawal, Department of Philosophy, Banaras Hindu University, Varanasi.

7. Singh, Geeta Kumar. **Shankar ke darshan evam Kashmir Shaiv Darshan mein adwaitvad ke tulnatmak adhyayan.** BHU. Dr Kanak Dwivedi, Department of Philosophy, Banaras Hindu University, Varanasi.

8. Singh, Parma Nand. **Vivekanand aur Shri Arvind darshan mein adwaitwad.** BHU. Dr K P Mishra, Department of Philosophy and Religion, Banaras Hindu University, Varanasi.

9. Tiwary, Vijay Dutt. **Kranti ke sadhan tatha samajik mulya.** BHU. Dr A K Rai, Department of Philosophy and Religion, Banaras Hindu University, Varanasi.

10. Upadhyay, Bhupendra Nath. **Vivekanand aur Shankar ke anusar jagat ke swaroop ka tulnatmak adhyayan.** BHU. Dr Kanak Dwivedi, Department of Philosophy and Religion, Banaras Hindu University, Varanasi.

Religion

1. Abhimanyu Singh. **A critical study of the problem of casuality in Buddhism.** BHU. Prof B N Singh, Department of Philosophy and Religion, Banaras Hindu University, Varanasi.

2. Mishra, Prasun Kumar. **Kshanmangwad-Abhidharmkosh ke vishesh sandarbh mein.** BHU. Prof R R Pandey, Department of Philosophy and Religion, Banaras Hindu University, Varanasi.

Language & Literature

English

1. Chaturvedi, Lata. **Dickens and romanticism: Continuity and change.** BHU. Dr S Sircar, Department of English, Banaras Hindu University, Varanasi.

2. Roy Choudhury, Mita. **The theme of death in the poetry of Keats and Shelley.** BHU. Dr R K Shukla, Department of English, Banaras Hindu University, Varanasi.

3. Singh, Rajesh Kumar. **The plays of W B Yeats: A study of his dramatic technique.** BHU. Dr R N Rai, Department of English, Banaras Hindu University, Varanasi.

Sanskrit

1. Mishra, Damodar. **Atharvavediya mantron ka yagya prakriya mein viniyog.** BHU. Dr S K Mishra, Department of Sanskrit, Banaras Hindu University, Varanasi.

2. Mishra, Rajendra. **Mandukya shiksha ka sameekshatmak adhyayan.** BHU. Dr S K Mishra, Department of Sanskrit, Banaras Hindu University, Varanasi.

3. Pandey, Anil Kumar. **Raghavapandaviya ka sameekshatmak tatha tulnatmak adhyayan.** BHU. Dr S M Jain, P V Research Institute, Karaudi and Dr R P Dwivedi, Department of Sanskrit, Banaras Hindu University, Varanasi.

4. Rai, Kumkum. **Dharmasharmathyudaya: Ek sameekshatmak adhyayan.** BHU. Dr S M Jain, P V Research Institute, Karaudi and Dr S L Jain, Department of Sanskrit, Banaras Hindu University, Varnasi.

5. Srivastava, Renu. **Vombhupal Charita ka sameekshatmak adhyayan.** BHU. Dr P D Singh, Department of Sanskrit, Banaras Hindu University, Varanasi.

Pali

1. Hur Kyong Gu. **A critical study of Rupa in abhidharma literature.** BHU. Dr M S Shukla, Department of Pali and Buddhist Studies, Banaras Hindu University, Varanasi.

Hindi

1. Giri, Shanti. **Hindi natakon mein rang nirdesh.** BHU. Dr Narvadeshwar Rai, Department of Hindi, Banaras Hindu University, Varanasi.

2. Jain, Munni. **Hindi gadya ke vikas mein Jain Manishi Sadasukh Das ka Yogdan.** BHU. Dr Indumati Singh, Department of Hindi, Banaras Hindu University, Varanasi.

3. Singh, Indu Prabha. **Riti mukta kaviyon kee soundarya chetna.** BHU. Dr N Rai, Department of Hindi, Banaras Hindu University, Varanasi.

4. Singh, Jagdhatri. **Hindi kee samkaleen kavita mein aam adami.** BHU. Dr Ashok Singh, Department of Hindi, Banaras Hindu University, Varanasi.

5. Upadhyay, Indu. **Swatantrayottar Hindi upanyas: Adhunikata bodh aur manav sambandh kee, 1950-70, parivartit bhasha.** BHU. Dr R N Shukla, Department of Hindi, Banaras Hindu University, Varanasi.

6. Varunendra Singh. **Ramcharit Manas kee kavya bhasha.** BHU. Dr Mangla Prasad, Department of Hindi, Banaras Hindu University, Varanasi.

Urdu

1. Khan, Malka. **Hindustani Akademi: Tarikh aur khidmat.** BHU. Dr Nasim Ahmad, Department of Urdu, Banaras Hindu University, Varanasi.

2. Laqa, Shahla Khush. **Mir Anees kee marsia nigari.** BHU. Dr Abdul Salim, Department of Urdu, Banaras Hindu University, Varanasi.

3. Nafisa. **Krishna Chand kee novel nigari.** BHU. Dr Abdul Salim, Department of Urdu, Banaras Hindu University, Varanasi.

4. Syed Kazim Mahdi. **Jamil Mazhari: Life and works.** BHU. Dr S H A Naqavi, Department of Urdu, Banaras Hindu University, Varanasi.

Bengali

1. Chakrabarty, Kashi Nath. **Kazi Najrul Islam O Sukanta Bhattacharyer kabikarmer tulnamulak alochana.** BHU. Prof S N Das, Department of Bengali, Banaras Hindu University, Varanasi.

Arabic

1. Ansari, Najmuddin. **A critical study of translation and commentary on Quran in Urdu talk the age of Sri Syed Ahmed Khan.** BHU. Dr I R Rizvi, Department of Arabic, Banaras Hindu Univer-

sity, Varanasi.

Tamil

1. Chandrasekaran, R. **A linguistic study of free verse in Tamil.** BHU. Dr Rathasrinivasan, Department of Linguistics, Banaras Hindu University, Varanasi and Dr N A Bharathi, Department of Linguistics, Banaras Hindu University, Varanasi.

Kannada

1. Chokkadi, Santosh. **S V Parameshwar Bhat: His life and works.** BHU. Prof V Shivanand, Department of Indian Languages, Banaras Hindu University, Varanasi.

2. Gudi Shreedharachar, H. **Language Shishunala Sherif's songs: A descriptive analysis.** BHU. Prof V Shivanand, Department of Indian Languages, Banaras Hindu University, Varanasi.

3. Malimath, Sheela Devi S. **Language and style in Mudra Manjusha of Kempu Narayan.** BHU. Prof V Shivanand, Department of Indian Languages, Banaras Hindu University, Varanasi.

Telugu

1. Bandi, Anantha Laxmi. **Sodial and patriotic poems of Gurujada Apparao and Mahakavi Subrawarla Bharat.** BHU. Dr N A Bharathi, Department of Indian Languages, Banaras Hindu University, Varanasi.

Nepali

1. Poudyal, Parsuram. **Nepali kosh vigyan ke vikas ka vishleshanatmak adhyayan.** BHU. Dr G S Nepal, Department of Indian Languages, Banaras Hindu University, Varanasi.

2. Rai, Sujata Rani. **Indrabahadur Raika kathama vastu chayan ra patra prayog.** BHU. Dr G S Nepal, Department of Indian Languages, Banaras Hindu University, Varanasi.

Geography

1. Bhattacharya, Chitrali. **Socio-economic and cultural aspects of infant mortality in Lucknow Urban Area: A geographical approach.** BHU. Dr (Mrs) T D Singh, Department of Geography, Banaras Hindu University, Varanasi.

2. Pandey, Kalpana. **Varanasi Metropolis: A geographical analysis of urban land.** BHU. Dr K K Dube, Department of Geography, Banaras Hindu University, Varanasi.

3. Sharma, Shailja. **Social-economic structure of Agra City.** BHU. Dr (Mrs) T D Singh, Department of Geography, Banaras Hindu University, Varanasi.

4. Singh, Rita. **Urban development and planning of Unao City.** BHU. Dr (Mrs) T D Singh, Department of Geography, Banaras Hindu University, Varanasi.

5. Yadava, Nandu Singh. **Micro level planning: Bhadeura Block, Ghazipur District, U P.** BHU. Dr K K Dube, Department of Geography, Banaras Hindu University, Varanasi.

History

1. Bhadoria, Sunil Singh. **Jabalpur Jile ka puratatva: Pragotaihasik yug se 1200 isvi tak.** H S Gour. Dr V D Jha.

2. Mohamed Ameen. **Role of the press in the movement for responsible Government in Travancore, 1936-1947.** Kerala. Dr A P Ibrahim Kunju, Prof (Retd), Rail View, Kaniyapuram.

3. Rai, Punam. **Upari Ganga ke maidan kee puratatvik sanskritya, lagbhabh esa san ke prambhabia tak.** BHU. Prof P C Pant, Department of Ancient Indian History, Culture and Archaeology, Banaras Hindu University, Varanasi.

4. Singh, Ran Vijay. **A study of Gupta coins with particular reference to their boarary on political and cultural history.** BHU. Dr P N Singh, Department of Ancient Indian History, Culture and Archaeology, Banaras Hindu University, Varanasi.

5. Tiwari, Mithlesh Kumar. **Kharvai Jila Raisen ke shailchitron ka adhyayan.** H S Gour. Dr S K Pandey.

THESES OF THE MONTH

A list of Doctoral Theses accepted by Indian Universities

SOCIAL SCIENCES

Library & Information Science

1. Trivedi, Nandkishor. **Communication and librarianship.** Vikram. Dr A T Murti.

Psychology

1. Awasthi, Bina Jaideo. **A study of prolonged deprivation, self concept and scholastic achievement.** Nagpur. Dr D S Janbandhu, Institute of Arts and Social Sciences, Nagpur.

2. Dixit, R K. **A comparative study of hypertensive and normal persons and their marital adjustment, anxiety level, social emotional adjustment, and family relationship.** Durgawati. Dr (Mrs) Kamal Bhatara, Head, Department of Psychology, Hawabagh Women's College, Jabalpur.

3. Ronald Clifford Bryant Jr. **Personality characteristics of drug abusers: A cross cultural study.** Delhi.

4. Sharma, Urmila. **Developmental study of perceptual comparisons through the mind's eye.** Awadhesh. Dr A K Shrivastava, Reader, Department of Psychology, Awadhesh Pratap Singh University, Rewa.

Sociology

1. Bajpayee, Laxmi. **Parivar niyojan ke prati jan abhiruchi ka ek vishleshnatmak evam sarvekshnatmak adhyayan: Bhind Jile ke vishesh sandarbh mein.** Jiwaji. Dr Munidra Mohan Chaturvedi, Prof, Department of Sociology, Madhav College, Gwalior.

2. Ramanuja Rao, K. **Rural to rural migration: A case study of Govindrao Pet Mandal, Warangal District** Osmania.

3. Roy Chaudhuri, Kumkum. **Juvenile delinquency and juvenile justice in India with special reference to West Bengal.** Calcutta.

4. Shrihari, A K. **Impact of modern technology on the socio-economic conditions of the traditional artisans of Kerala.** Kerala. Dr Jacob John Kattakayam, Lecturer, Department of Sociology, University of Kerala, Kariavattom.

5. Tiwari, Manisha. **Uchchttar madhymik vidyalaya shikshkon per sthanantran ka prabhav: Brihattar Gwalior ke vishesh sandarbh mein.** Jiwaji. Dr (Smt) S Dwivedi, Asstt Prof, Department of Sociology, Govt Girls PG College, Moti Tabela, Indore.

Social Anthropology

1. Ghosal, Samit. **The Lepchas of Darjeeling and Sikkim: A study in cultural ecology and social change.** NBU.

Political Science

1. Gope, Indra. **Integrated rural development programme in Bihar: A case study of Chakradharpur Block in the District of Singhbbum.** Ranchi. Dr Akhileshwar Prasad Singh, Department of Political Science, Ranchi University, Ranchi.

2. Kumarasamy, P R. **India's policy towards Israel, 1948-1980.** JNU. Prof M S Agwani, Centre for West Asian and African Studies, Jawaharlal Nehru University, New Delhi.

3. Thomas, C Joshua. **Ethnic conflict in Sri Lanka and the Indian Governments: Attitude towards it, 1977-1987.** NEHU. Dr B Pakem, Vice Chancellor, North-Eastern Hill University, Shillong.

Economics

1. Asif Jahan. **Development planning and disparities in A P: An inter-regional analysis between 1956-57 and 1985-86.** Osmania.

2. Baruah, Rama Kanta. **Land alienation in Assam: A case study in Kamrup District.** Gauhati. Dr P C Goswami, Prof, Gauhati University, Guwahati.

3. Basavaiah, C. **Costs and finances of higher education: A case study.** Venkateswara. Prof G Raghava Reddy, Department of Economics, Sri Venkateswara University, Postgraduate Centre, Kavali.

4. Bhargava, Sunil Kumar. **Guna Jile mein audyogikaran ke vikas kee sambhavnayen.** Jiwaji. Dr S N Agrawal, 79 Balwant Nagar, Gandhi Road, Gwalior.

5. Bhave, Subhash Waman. **Study of the infrastructural facilities for small scale industry in Jabalpur City.** Durgawati. Dr P C Shrivastava, Kamla Sadan, Kamla Nehru Nagar, Jabalpur.

6. Bhuvendran, P. **Impact of long term financing of land development banks on the tribal economy of M P with special reference to the west tribal zone.** Vikram. Dr S S Panwar.

7. Chakrabartty, Partha Kumar. **Integrated rural development in Nepal: A study of two development projects with regard to their organisation and socio-economic benefits.** NBU.

8. Dube, Nirmala. **Kendriya Sehkari Bank ka krishi vitt vyavasthayon main yogdan: Bhind Jile ka vishesh adhyayan.** Jiwaji. Dr R P Saraswat, Department of Economics, M L B Arts and Commerce College, Gwalior.

9. Falendra Kumar. **The population explosion and the unemployment problem in South Asia.** Jammu. Prof A N Sadhu.

10. Gadam, Sudhakar Narhari. **Assessment of usefulness of integrated rural development programme for poverty alleviation with special reference to Sangli District.** Nagpur. Dr S V Khandewale, Department of Economics, Nagpur University, Nagpur.

11. Gupta, Ashok Kumar. **Kshetriya Grameen Bank kee grameen vikas mein bhumika: Gwalior Datiya Kshetriya Grameen Bank ke vishesh sandarbh mein.** Jiwaji. Dr S K Shukla.

12. Jasbir Singh. **Working of I R D programme in J&K: An evaluation.** Jammu. Dr Amarjit Singh.

13. Joseph, K J. **Indian electronics industry: A study of growth and structural change in the eighties.** JNU. Dr K K Subramanian and Dr P Mohanan Pillai.

14. Joshi, Madhura. **Punyateel mahila sehkari sansthacha mahilana rozgar purvina ya itra sanstha: Tulnatmak abhyas.** SNDT. Smt. Sulochana Nadkarni.

15. Kamalamma, G. **Trends and determinants of health and nutritional status in Andhra Pradesh.** Andhra.

16. Kusmaria, Ram Krishna. **Productin economics of raising important crops in Mandla District, M P.** Durgawati. Dr S S Gour, C/o Dr (Kum) V Patel, Department of Agricultural Economics, College of Agriculture, Jabalpur.

17. Ladha, Jaishree. **Ujjain Sambhag mein nagar nigamon ka vittiya adhyayan.** Vikram. Mr S Murti.

18. Mahbub Ullah. **Processes of income formation and patterns of livelihood: A study of structural changes among rural households in two villages of Bangladesh.** JNU. Prof Krishna Bharadwaj, Centre for Economic Studies and Planning, Jawaharlal Nehru University, New Delhi.

19. Modi, Champaklal Dhanjibhai. **Market structure of edible oil industry in Gujarat: A study with reference to groundnut oil industry.** Patel. Dr H G Patel.

20. Pandey, Iti. **Raigarh Jile mein hath kargha udyogon mein rojgar evam aye.** Ghasidas. Dr B P Ambasth, Principal, Government College, Korba.

21. Revathy, V. **The structural pattern of land holdings and its impact on productivity, income and employement of farms in Trichirapalli District.** Bharathidasan. Dr K Thiruvenkatachari, 72 East Chitra Street, Srirangam.

22. Savitha Devi. **Systems approach to development: A study on irrigation with reference to Nagarjuna Sagar Command Area.** Osmania.

23. Sen, Badal Kumar. **Plywood industry of Assam: A study of its problems and prospects.** Dibrugarh. Dr H Goswami, Prof, Department of Economics, Dibrugarh University, Dibrugarh.

24. Sharma, Archana. **Bundelkhand ke arthik vikas mein Bhartiya State Bank ka yogdan.** Awadhesh. Dr K S Dangi, Prof, Department of Economics, Maharaja College, Chhatrapur.

25. Sharma, Brijbhan Prasad. **Rewa: Sidhi Grameen Bank ka vittiya evam prabandhkiya adhyayan.** Awadhesh. Dr V C Sinha, Prof and Head, Department of Business Economics, Awadhesh Pratap Singh University, Rewa.

Public Administration

1. Sharma, Seema. **Sub-division administration in Rajasthan.** Rajasthan. Prof K D Trivedi, Department of Public Administration, University of Rajasthan, Jaipur.

Military Studies

1. Vaidh, Rajendra Kumar. **Dwitiya Anglo-Maratha Yuddh ka vishleshnatmak adhyayan General Valesali ke sainya abhiyan ke vishesh snadarbh mein: Aasai ke sangram se Argaon tak.** Jiwaji. Dr V W Wagh, Principal, Govt Degree College, Alampur.

2. Yadav, Keshav Singh. **Shivaji kee rashtriya nausena: Ek vishleshnatmak adhyayan.** Jiwaji. Dr V W Wagh, Principal, Govt Degree College, Alampur.

Education

1. Aruna, G. **A study of psychological and educational implications of J Krishnamurthy's observations and relationship.** Nagarjuna. Dr T J Rajendra Prasad, Principal, A L College of Education, Guntur.

2. Brar, Dalvinder Kaur. **Development of a model for talent search in selected sports based on motor physiological and structural factors.** Jiwaji. Dr Ajmer Singh, Dean, Laxmibai National

College for Physical Education, Gwalior.

3. Chandrasekaran, P. **Need gratification and perception of values among graduate teachers of Periyar District in Tamilnadu.** Madras.

4. Chinnamma, P. **A comparative study of the performance of degree colleges under different managements in Coastal A P.** Osmania.

5. Kanya, Phra Maha Sakel. **A study of the difficulties in reading comprehension in English experienced by the teacher trainees in the colleges of education in Madras.** Madras.

6. Katoch, Rekha. **Survey of postrual deformities of Delhi school children in relation to minimal strength.** Jiwaji. Dr A K Uppal, Deputy Dean, Laxmibai National College for Physical Education, Gwalior.

7. Nagarjan, N. **Human resource development through multi media forums with specific reference to radio forums.** Madras.

8. Pandey, Vivek. **Temporal changes in selected physiological and biological variables among different sports groups.** Jiwaji. Dr M S Gill, Reader, Laxmibai National College for Physical Education, Gwalior and Dr A K Dutta, Laxmibai National College for Physical Education, Gwalior.

9. Paonam, Minakumari Devi. **The development of pre-primary education in Manipur with special reference to Imphal Town, 1957-1985.** Manipur. Dr Kh. Gambhini Devi, Asstt Director, Department of Adult, Continuous Education and Extension, Manipur University, Imphal.

10. Pazhayapurayil, Suresh Koodamvalli. **Identification of certain sociological cognitive and environmental variables related to process outcomes in secondary school Biology.** Calicut. Dr A Sukumaran Nair, Harimandiram, Vanchiyour, Trivandrum.

11. Singh, Rishi Pal. **Comparative effectiveness of specific circuit training, weight training and combination training on selected skills among Basketball players.** Jiwaji. Dr (Mrs) T Mall, Reader, Laxmibai National College for Physical Education, Gwalior.

12. Vaghela, Vrajlal Keshvlal. **Dhoran sat mate samajshastra visayma mulak-sandharbh kasotini rachana ane tenu yathirthikaran.** Bhavnagar. Dr (Miss) D J Modi, Prof and head, Department of Education, Bhavnagar University, Bhavnagar.

Commerce

1. Agrawal, Shyam Sundar. **Sarguja Jile mein vanopaj per adharit laghu udyogon ka adhyayan.** Ghasidas. Prof J K Agrawal, Vidya Up Nagar, Bilaspur.

2. Agrawal, Shyam Sunder. **Madhya Pradesh mein panchvin evam chhatvin Panch varshiya yojanayon ke antragat cement udyog ka alochnatmak adhyayan.** Jiwaji. Dr Surendra Maheshwari, Department of Commerce, Madhav College, Gwalior.

3. Aijaz Ahmad. **A study of financial structure of sugar mills under the U P Sugar Mill Corporation.** AMU. Prof Nafees Baig.

4. Gopalan, P. **A study of the public distribution system with special reference to the Kerala State Civil Supplies Corporation.** Calicut. Dr E P Sainul Abideen, Department of Commerce and Management Studies, University of Calicut, Calicut.

5. Gowda, K Naja. **Investment, pricing and financial performance in Karnataka Electricity Board.** Gulbarga. Dr K V Prabhakar, Chairman, Department of Commerce, Gulbarga University, Gulbarga.

6. Gupta, Sanjay Kumar. **Bhartiya Jeevan Beema Nigam ke davon ka niptara: Madhya kshetra ko adhar man kar.** Jiwaji. Dr M S Vardani, Prof and Head, Department of Commerce, M L B Arts and Commerce College, Gwalior.

7. Kapur, Vinit. **Top decisin-making organisation in Indian industry: A study of corporate practices.** Delhi.

8. Khan, Mohd Riaz. **A critical study of the role of U P State Cooperative Bank in the development of agro-based industries of U P.** AMU. Prof Mahfoozur Rahman.

9. Krishna Rao, B. **The finances of Andhra Pradesh State Financial Corporation.** Saurashtra. Dr H N Agrawal.

10. Mohana Rao, P Jagan. **Financial appraisal of Indian automotive tyre industry.** Venkateswara. Dr C Sivarami Reddy, Reader, Department of Commerce, Sri Venkateswara University, Post Graduate Centre, Cuddapah.

11. Narania, Raj Singh. **A factorial study of cognitive styles of high school students of Jammu Province.** Jammu. Dr N R Sharma.

12. Pandian, C Sounthara. **Growth of entrepreneurship in small scale industry: An empirical study of Madurai Region.** Madurai.

13. Ramakrishna, A. **Impact of poverty alleviation programmes on tribal population: A case study of Kota Block of Bilaspur District.** Ghasidas. Dr L M Malviya, Department of Commerce, Guru Ghasidas University, Bilaspur.

14. Sasidharan Nayar, N. **Export marketing problems and prospects of Indian products in Gulf countries.** Madurai.

15. Saxena, Gopal. **Marketing in commercial banks: A study of State Bank of India.** Manipur. Dr V P Giri, Prof, Department of Commerce, Manipur University, Imphal.

16. Trinath Reddy, D. **Bhilai Ispat Sanyantra mein utpadakta protsahan yojnayen.** Ravishankar. Dr D B Agrawal, Prof, Department of Commerce, R C S Arts and Commerce College, Durg.

Home Science

1. Mathew, Elizabeth. **The relationship between the attitude of the family towards the disability and the adjustment made by the orthopaedically disabled.** Madras.

Management

1. Forbes, David J. **The stock market in India: An analysis of efficiency parameters.** Osmania.

2. Kamal Parkash. **Management of earning in automobile industry in India.** Jiwaji. Dr D C Sharma, Prof and Head, Department of Commerce and Management, Jiwaji University, Gwalior.

3. Madhusudana Raju, Rudraraju. **Contract labour problems: A study of contract labour in the Visakhapatnam Steel Project.** Andhra.

4. Nirmal Singh. **Influence of socio-economic and managemental factors and season on the performance of poultry farms of Sirsa, Jind and Sonipat Districts of Haryana.** HAU.

EDUCATION NEWS INDEX

A list of select articles and editorials on education from newspapers received in the AIU Library during March 1992.

EDUCATIONAL PHILOSOPHY

Khera, M S. Education: A new experiment. **The Tribune** 8.3.92.

Singh, Har Swarup. Experiential learning. **The Hindustan Times** 11.3.92.

EDUCATIONAL PSYCHOLOGY

Fiayaz Ahmed, S. To foster scientific thinking. **The Hindu** 3.3.92.

EDUCATIONAL SOCIOLOGY

Altbach, Philip G. US schools lack academic focus. **The Times of India** 31.3 92.

Galanter, Marc. Neutral viewpoint on reservations. **Free Press Journal** 1.3.92.

Rego, Stephen. Not by caste alone. **Free Press Journal** 1.3.92.

Sharma, R D. Caste as basis of job quotas. **Patriot** 26.3.92.

TOWARDS A better India (Editorial). **The Hindustan Times** 31.3.92.

Viswanathan, Aparna. Constitution and equality. **Patriot** 12.3.92.

EDUCATIONAL POLICY & PLANNING

Kaul, Sumer. What ails education?: Elementary, my dear... **The Pioneer** 28.3.92.

SHADOW PLAY of panels (Editorial). **Deccan Herald** 4.3.92.

Shamsuddin. Lessons from gurukulas. **Deccan Herald** 13.3.92.

Udayamurthy, M S. Make it a journey to excellence. **The Hindu** 10.3.92

EDUCATIONAL ADMINISTRATION

Amrik Singh. State varsities deserve better deal from UGC. **Deccan Herald** 6.3.92

———————— Urgent need to streamline UGC. **The Times of India** 14.3.92.

ANSWERED QUESTIONS (Editorial). **The Tribune** 25.3.92.

Chalam, K S. Higher education: Laying down priorities. **The Hindu** 24.3.92

Chaudhary, Shreesh. Unplanned growth, excessive centralisation. **The Hindu** 17.3.92

Girimaji, Pushpa. Universities and negligence. **The Times of India** 28.3.92

IIMs LEARN to manage (Editorial). **The Economic Times** 22.3.92

MULTIPLE CBSE muddle (Editorial). **The Hindustan Times** 7.3.92.

Nanjundappa, D M. UGC conditionalities and college teachers. **Deccan Herald** 27.3.92.

OVERHAUL OF education (Editorial). **The Economic Times** 15.3.92

Ramaswamy, N S. Education: Let private sector in. **Deccan Herald** 30.3.92.

REPUGNANT MOVE (Editorial). **The Pioneer** 3.3.92

RESTRUCTURING CSIR (Editorial). **The Economic Times** 17.3.92.

EDUCATION & POLITICS

Bipan Chandra. History made and unmade. **The Times of India** 1.3.92.

Datta, Rita. Lessons of history. **The Statesman** 28.3.92

Kuldeep Kumar. History of contention. **The Pioneer** 1.3.92.

Parekh, Angana. Academic tourism or historical debate? **Indian Express** 1.3.92.

Soroor Ahmed. Abolition of Maithili: Laloo's latest ploy. **National Herald** 29.3.92.

CURRICULUM

Balaram, Gunvanthi. Acid text. **The Times of India** 15.3.92.

Mohanty, Sunil Behari. Orientation, refresher courses for teachers. **The Hindu** 3.3.92.

Nanjundaswamy, A S. Binding India with history books. **Deccan Herald** 20.3.92.

Prahallada, N N. Community work in varsity curriculum. **Deccan Herald** 20.3.92.

Sundararaman, Lalitha. Can educated parents help? **The Hindu** 31.3.92.

Venkataraman, D. Restructuring curriculum at secondary level. **The Hindu** 24.3.92.

LANGUAGE & LANGUAGE POLICY

Amrik Singh. Status of Punjabi in Punjab. **The Tribune** 24.3.92.

Banerjee, Sivadas. Manipuri: Language issue becomes explosive. **Free Press Journal** 14.3.92.

CAUSE OF Manipuri (Editorial). **The Telegraph** 2.3.92.

Das, Manoj. "English as she is spoke". **The Hindu** 1.3.92.

Harriett, Linda. Professor grammar. **The Hindu** 15.3.92.

LANGUAGE BARRIERS (Editorial). **The Statesman** 30.3.92.

LANGUAGE OF contention (Editorial). **The Times of India** 7.3.92.

MANIPURI RECOGNITION (Editorial). **The Hindustan Times** 1.3.92.

Mohinder Singh. Phenomenon of English medium schools. **The Hindu** 10.3.92.

ORDER ABOUT (Editorial). **The Times of India** 25.3.92.

Prabhakar, S. Why this anomaly? **The Hindu** 24.3.92.

Sinha, Ravi R. Many upset by govt's decision on Maithili. **Deccan Herald** 17.3.92.

Vaidyanathan, T G. Twinkle twinkle little star. **The Hindu** 8.3.92.

SCIENCE EDUCATION

Kothari, V N. Utility not the only goal of science. **The Times of India** 12.3.92.

Subramanian, P R. School level physics. **The Hindu** 24.3.92.

VOCATIONAL EDUCATION

Kedar Shankar, S. Handing students tools of trade. **Deccan Herald** 6.3.92.

DISTANCE EDUCATION

Prasad, V S. Distance education: The new role. **The Hindu** 3.3.92.

Roy, Ash Narain. Open universities: Taking education to students. **The Hindustan Times** 30.3.92.

TEACHERS & TEACHING

Bharvani, Shakuntala. English as she is taught. **The Times of India** 8.3.92.

George, C T. What makes a good teacher. **Patriot** 3.3.92.

Maini, Darshan Singh. AIDS in the academic world. **The Tribune** 9.3.92.

Mishra, Ambarish. Private lessons. **The Times of India** 15.3.92.

Rajappa, Lakshmi. Changing role of headmaster. **The Hindu** 17.3.92.

Selvam, S. Students are the best evaluators. **The Hindu** 31.3.92.

EDUCATIONAL TECHNOLOGY

Thaman, R K. Better teaching with computers. **The Tribune** 29.3.92.

EDUCATIONAL EVALUATION

Anantapadmanabhan, N. Merit plays no role. **The Hindu** 31.3.92.

Joshi, Navin Chandra. Examination that failed. **The Assam Tribune** 2.3.92.

Manickavasagam, K. Open book examination: Viable alternative. **The Hindu** 24.3.92.

Seshagiri Rao, D. Effete and crumbling system. **Deccan Herald** 13.3.92.

SICKENING EXAMS (Editorial). **The Tribune** 10.3.92.

Viswanathan, Prema. Alas, the class of '92. **The Times of India** 15.3.92.

__________________ Test of nerves. **The Times of India** 15.3.92.

ECONOMICS OF EDUCATION

Gopalakrishnan, Saroja. Earn to learn. **The Hindu** 10.3.92

Mitra, Sumit. 45.37 lakh educated unemployed. **Indian Express** 7.3.92.

Pandey, Kedar Nath. Economics of medical education.**The Assam Tribune** 28.3.92.

'YOU CAN'T ask a graduate to do menial work' (Editorial). **The Economic Times** 15.3.92.

LIBRARIES & BOOKS

Anand, A K. Libraries of tomorrow: The word unwalled. **The Tribune** 15.3.92.

Atma Ram. Significance of a vital library network. **The Hindu** 3.3.92.

Butler, Rupert. London's literary haven is 150. **Deccan Herald** 15.3.92.

Chopra, Ashok. Book fair and after. **The Hindustan Times** 1.3.92.

Choudhury, Savitri. Job of books. **The Times of India** 15.3.92.

COPYBOOK BLOTTED (Editorial). **The Statesman** 23.3.92.

Duggal, K S. Has the book a future? **The Hindustan Times** 14.3.92.

ENRICHING SCHOOL books (Editorial). **The Hindu** 11.3.92.

Malhotra, D N. IPA meet: Opening a new chapter. **The Times of India** 13.3.92.

Malik, B P S. Turning point. **The Hindustan Times** 14.3.92.

Moraes, Dom. Book bound. **The Times of India** 1.3.92.

Vaidya, Abhay. Worming among the books. **The Times of India** 15.3.92.

Venu, S. Economics of intellectual property right protection. **The Hindu** 5.3.92.

Wijesinha, Sanjiva. Book revolution is hitting India. **The Pioneer** 26.3.92.

PHYSICAL EDUCATION & SPORTS

Vattam, Krishna. Demise of sports in universities. **Deccan Herald** 3.3.92.

SPECIAL EDUCATION

Jangira, N K. Special education for the nineties. **The Times of India** 15.3.92.

WOMEN'S STUDIES

Menon, Nivedita and others. From father to husband via the women's hostel.**The Pioneer** 3.3.92.

Ninan, Sevanti. First step towards change. **The Hindu** 8.3.92.

Sen Gupta, M. Removing the gender bias. **The Hindu** 10.3.92.

Swaminathan, M S. Reaching out higher. **The Hindu** 8.3.92.

ADULT EDUCATION

Jain, G P. Adult literacy: Need for fine tuning. **The Hindustan Times** 2.3.92.

________________ Ernakulam experiment-I: Lessons to learn. **The Hindustan Times** 26.3.92.

__________________ Ernakulam experiment-II: A planning success. **The Hindustan Times** 27.3.92.

LITERACY DRIVE brooks no let-up (Editorial). **The Hindu** 31.3.92.

Mojumdar, Modhumita. Scepticism over total literacy. **The Statesman** 29.3.92.

Ninan, Sevanti. Literacy at the workplace. **The Hindu** 22.3.92.

ELEMENTARY & SECONDARY EDUCATION

Jalan, K K. Nursery admissions: How do they select? **The Tribune** 28.3.92.

Joshi, Uma. Bondage of modern schooling. **National Herald** 13.3.92.

Venkatram, Shree. Education: Trauma for tiny tots.**The Pioneer** 8.3.92.

INTERNATIONAL COOPERATION

Seyyid Abdulai, Y. UNESCO in a changing world. **National Herald** 19.3.92.

INSTITUTIONAL PROFILE

Sudhir, T S. Sculpting careers out of stone: College of Art, New Delhi. **The Pioneer** 27.3.92.

CLASSIFIED ADVERTISEMENTS

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	i) Computer Science & Engineering	4
	ii) Management Science	1
	iii) Social Sciences	1
	iv) Co-ordination	1
	v) Bio-Technology	1
	vi) Remote Sensing	1
	vii) Energy Studies	1
	viii) Transportation	1
	ix) Photography	1
II.	**ASSISTANT PROFESSORS :**	
	Group I (Arts, Commerce Etc.)	
	i) Photography	2
	ii) Librarian	1
	iii) Painting	1
	Group III (Engineering & Technology)	
	i) Computer Science & Engineering	8
	ii) Civil Engineering	3
	iii) Mechanical Engineering	7
	iv) Electronics & Communication Engg.	1
	v) Bio-Technology	1
	vi) Transportation Engineering	1
	vii) Metallurgy	1
	viii) Printing Technology	1
	ix) Chemical Engineering	1
	x) Senior Systems Analyst	1
	xi) Electrical Engineering	1
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	Group-I (Arts & Commerce etc.)	
	i) Photography	1
	ii) Management Science	2
	iii) Applied Arts	2
	iv) Sculpture	2
	v) Painting	1
	Group-III (Engineering & Technology)	
	i) Civil Engineering	1
	ii) Electrical Engineering	7
	iii) Mechanical Engineering	2
	iv) Electronics & Communication Engg.,	4
	v) Architecture	2
	vi) Metallurgy	3
	vii) Printing Technology	3
	viii) Computer Science & Engineering	17
	ix) Chemical Engineering	3

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The Rule of Reservation prescribed by State Government for S.C./S.T./B.Cs. (ABCD), including backlog of posts for S.C. and S.T. candidates, will be followed.

The prescribed application forms and instructions to candidates can be had from the Registrar, JNTU, Mahaveer Marg, Hyderabad - 500 028, A.P., on payment of Rs. 25/- for others and Rs. 5/- in case of S.C./S.T. by a Crossed Postal Order or Crossed D.D. drawn not earlier than **1.4.1992**, in favour of the Registrar, JNTU, Mahaveer Marg, Hyderabad - 500 028, A.P.

The requisition for the application form must be accompanied positively by a self-addressed envelope of the size of 20 cm x 30 cm. duly affixing postal stamps worth of Rs. 5/- if required by post. Sale of application forms shall commence from 6.4.1992.

The application form duly filled-in together with attested copies of Certificates should reach the Registrar, JNTU, Mahaveer Marg, Hyderabad - 500 028, A.P. on or before 5.00 p.m. on **6.5.1992**, together with Crossed Demand Draft or Crossed Indian Postal Order for Rs. 25/- for others and Rs. 5/- in case of S.C./S.T. candidates drawn in favour of the Registrar, JNTU, Mahaveer Marg, Hyderabad - 500 028, towards registration fee. Those who are in employment should route their applications through their present employer.

Defective applications, applications without attested copies of Certificates and applications received after the date prescribed will be rejected and no correspondence will be entertained in this regard.

The University reserves to itself the right to increase or decrease the number of posts, to fill or not to fill any or all the above posts, and to appoint the candidates to posts lower than the one they applied without assigning any reasons therefore.

REGISTRAR

MEERUT UNIVERSITY

MEERUT

Applications are invited for the following teaching posts. The application of prescribed form should reach the Registrar, Meerut University, Meerut - 250005, latest by 2 May, 1992.

(A) One permanent post of Reader in Psychology with specialization in 'Experimental Psychology and Research Methodology' in the grade of Rs. 3700-125-4950-150-5700.

Minimum Qualifications

(i) Good academic record with a doctorate degree or equivalent published work, and active engagement in research or innovation in teaching methods or production of teaching materials; and

(ii) Five years' experience of teaching or research including at least three years as Lecturer or in an equivalent position. Provided that the requirement contained in sub-clause (ii) may be relaxed in the case of a candidate who, in the opinion of Selection Committee, has outstanding research work to his credit.

Note : A candidate having at least second division, in his/her entire academic record is said to have a good academic record.

(B) One post of lecturer in Russian Language (permanent vacancy against a permanent post), one post of lecturer in Agricultural Botany (temporary vacancy against permanent post which is likely to be permanent w.e.f. 27.10.1992) and one post of Lecturer in Statistics (temporary vacancy against a permanent post which is likely to be permanent w.e.f 30.12.1992) in the grade of Rs. 2200-75-2800-100-4000.

Minimum Qualifications :

For the posts of lecturer in Russian Language and Statistics :

(i) Consistently good academic record with at least 55% marks or its equivalent grade in Master's degree, or an equivalent degree of a foreign University in the relevant subject.

Note : A candidate having obtained either an average of 55% marks in Bachelor degree and second class in Intermediate examination OR 50% marks in each of the two examinations separately, is said to have consistently good Academic Record.

(ii) Only those candidates who, besides fulfilling the minimum academic qualifications prescribed for the post of lecturer, have qualified in a comprehensive test, if any, to be conducted according to the scheme of the University Grants Commission, will be eligible for appointment as lecturer.

Provided that a candidate :

(a) who has passed U.G.C. or CSIR or JRF examination,
(b) who has already been awarded Ph.D. or M.Phil. degree, or
(c) who will be awarded M.Phil. degree up to December, 1990 or Ph.D. degree upto December, 1992,

shall not be required to qualify in such a comprehensive test.

Minimum Qualifications: For the post of lecturer in Agricultural Botany.

M.Phil in First Division, or a first class in High School, Intermediate, degree and postgraduate examination or first class postgraduate or M.Phil. with a Ph.D. degree or an average second class career taking into consideration High School, Intermediate, Degree and postgraduate examinations with a Ph.D. degree.

Note : Other things being equal preference will be given to the Scheduled Caste/Tribe candidates who are considered fit. Such candidates should attach certificate to that effect from the District Magistrate.

Prescribed application form can be obtained by sending a request to the Asstt. Registrar (Accounts), Meerut University, Meerut - 250005, along with a self-addressed envelope of size 23 x 10 cms. and stamped worth Rs. 3/- accompanied by a Bank Draft of Rs. 20/- in favour of the Finance Officer, Meerut University, Meerut, or by Cash Payment of Rs. 20/- at the Cash Counter of the University. I.POs. or M.Os. are not acceptable. While requesting for application form please mention "Application for teaching Post" on the envelope.

Har Prakash
REGISTRAR

INDIAN INSTITUTE OF PUBLIC ADMINISTRATION

INDRAPRASTHA ESTATE, RING ROAD NEW DELHI - 110 002.

The Indian Institute of Public Administration, a National Institute for the Study of Public Administration, engaged in undertaking research and consultancy and training programmes for Civil Services, invites applications for the post of a Professor of Justice and Administration in the scale of pay of Rs. 4500-150-5700-200-7300. Age limit not exceeding fifty years.

Prescribed form of application and details about essential qualifications, experience etc., can be obtained from the Registrar, free of charge, by sending a self-addressed envelope of the size of 25 cm x 10 cm.

Appointment may also be made on deputation. Experienced persons in administration will also be eligible to apply. Qualifications and age limit relaxable in the case of exceptionally well qualified candidates. The Institute may also consider suitable candidates who might have not applied. The Institute reserves the right to fill or not to fill the post. Other things being equal, preference will be given to SC and ST candidates.

Candidates called for interview from outside Delhi will be re-imbursed actual Ist class rail fare to and fro by the shortest route on production of ticket number. Completed applications in the prescribed form should reach the Registrar on$or before **May 29, 1992**.

MANIPUR UNIVERSITY

CANCHIPUR : IMPHAL

ADVERTISEMENT NO. 6/92
Dated, the 27th March, 1992

No. MU/6-14/87-Admn.I : Applications are invited for the following post in the Department of Audit & Continuing Education and Extension of this University :-

1) Project Officer 1(one)
Reserved for ST

Scale of pay – Rs. 2200-75-2800-100-4000/- plus admissible allowances.

Qualifications

1. **Essential**

(i) Good academic record in the subject of Adult/Continiung/Community/Extension Education/Community Development from a recognised Indian University or an equivalent degree from a foreign University.
(ii) M.Phil or Ph.D. in a subject related to adult learning or Ph.D. in a subject under Social Science or Education or Evidence of published research learning materials and learning resources on areas listed in (i) above or published research in any of the relevant area/areas indicated above.

OR

(i) Good academic record in Social Sciences/Social work/Humanities/Education/Sciences/Home Science.
(ii) Post Master's Diploma in Adult and Continuing Education from a recognised Indian University or an equivalent diploma degree from a foreign University.
(iii) M.Phil or Ph.D. in a subject related to adult learning or a Ph.D. in a subject under Social Sciences or Education or Evidence of published learning materials and learning resources or areas listed in adult/continuing/community/extension/education/community development or published research in any of these area/areas.

2. **Desirable**

Two years experience of field work on a subject having bearing on adult/Continuing/Extension/Community/Non-Formal Education/Community Development.

OR

Two years teaching experience in the subject of Adult and Continuing Education at Graduate/Postgraduate levels.

Explanation

For determining "good academic record" the following criteria shall be adopted.

Project Officers

(i) A candidate holding a Ph.D./M.Phil. degree should possess at least a second class Master's degree; or
(ii) A candidate without a Ph.D. degree should possess a high second class Master's degree and second in the Bachelor's degree; or
(iii) A candidate not possessing Ph.D. degree but possessing second class Master's degree should have obtained first class in the Bachelor's Degree.

Applications on plain paper (duplicate) indicating candidate's name, father's name, permanent and postal address, date of birth, qualifications, experience, field of specialisation, publication, research project undertaken, detailed visits to foreign countries, seminars/conferences attended and passport size photographs duly attested by a Gazetted officer and Caste/Tribe Certificates (in case of SC/ST candidates) from a competent authority should reach the Registrar, Manipur University, Imphal 795003 on or before **April 28, 1992**. Those in employment must apply through their present employers. No TA & DA will be paid to candidates called for interview. It is open to the University to consider names of suitable candidates who may not have applied.

Date of interview, list of candidates eligible for interview will be displayed on the Notice Board of the University on April 30, 1992.

Dr. T. Gokulchandra Singh
REGISTRAR

Corrigendum

With reference to our Advertisement No. 1/92 dated 22.2.92, published in March 9, 1992 issue of the Journal on pages 46 and 47 at Sl. No. 8, the portion "Preferably with teaching experience in Post Graduate Classes" may be deleted from the Advertisement.

REGISTRAR
DIBRUGARH UNIVERSITY
DIBRUGARH

GULBARGA UNIVERSITY
GULBARGA

No. GUG/ADM-1/91-92/6262

Date: 30.3.1992

NOTIFICATION

SUB: APPLICATION FOR APPOINTMENT TO THE TEACHING POSTS.
Ref : This Office Notification No. GUG/ADM-1/91-92/441 dt. 14.6.91.

Applications in the prescribed form in Eight Sets are invited from qualified candidates of Indian Nationality for the following teaching posts in various P.G. Departments of Gulbarga University. The applications together with necessary documents should reach the Registrar, Gulbarga University, Gulbarga - 585 106, by Registered Post on or before **4th May 1992**. The details of posts are as under:

Sl. No.	Name of the Posts & Scale of pay	Departments	No. of Posts	Remarks
1.	PROFESSORS (4500-150-5700-200-7300)	Mathematics (Computer Science)	1	GM
		Lib & Infn. Science. History/Sociology/MSW/ Hindi/Psychology/Biochemistry/ Statistics/Mineral Exploration/ Mineral Exploration/ Geology (Min. Processing)/Urdu/ Economics/Botany/Law/ Political Science/Education.		ALL SINGLE POSTS GM Total Posts-16
2.	READERS (3700-125-4700-150-5700)	Urdu/Sanskrit/Library & Information Science/ MSW/Mineral Processing/		ALL SINGLE POSTS GM Total Posts - 5
		English	1	GM
		Kannada	1	Gr-B
		Biochemistry	1	GM
		Inorganic Chem.	1	Gr-A
		Organic Chemistry	1	Gr-B
		Physical Chem.	1	GM
		Physics	1	GM
		Mathematics	1	Gr-B
3.	LECTURERS (2200-75-2800-100-4000)	English	3	GM-1; Gr. A-1; Gr. B-1
		Kannada	4	GM-2;Gr. C-1; Gr. D-1
		M.S.W.	1	GM
		Physics	1	Gr-B
		Mathematics (1 post for Computer Science)	5	GM-3; Gr. A-1; Gr. B-1
		Analytical Chem.	1	Gr-A
		Chemical Engg.	1	GM
		Drilling	1	Gr.-A
		Metallurgy	1	Gr.-B
		Statistics	1	GM
4.	LIBRARIAN (4500-150-5700-200-7300)		1	SINGLE POST - GM

Candidates who have already applied for the posts in response to this office notification referred to above, need not apply again. Additional information, if any, may be forwarded to the Registrar, Gulbarga University, Gulbarga.

QUALIFICATIONS:

The General Qualifications prescribed for the above posts are as per UGC norms.

1. PROFESSOR:

An eminent scholar with Doctorate degree and published work of high quality actively engaged in research. About ten years' experience of teaching and/or research. Should have guided candidates for research degree at Doctorate level successfully.

OR

An outstanding scholar with Doctorate degree and established reputation who has made significant contribution to knowledge.

2. READER:

Good academic record with a Doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

About five years' experience of teaching and/or research provided that at least three years worked as Lecturer or in an equivalent position. This condition may be relaxed in the case of candidates with outstanding records of Teaching/Research.

3. LECTURER:

(a) Good academic record with Master's Degree in a relevant subject with at least 55% marks or its equivalent grade from an Indian University or an equivalent degree from a foreign University. Ph.D. in the relevant subject is desirable.

(b) Two years of teaching and/or research experience in relevant subject.

4. LIBRARIAN:

i) Master's Degree in Library Science/Information Science/Documentation with at least fiftyfive per cent marks or its equivalent grade and a consistently good academic record;

ii) One year specialisation in an area of Information Technology/Archives and Manuscript keeping. Master's Degree in an area of thrust in the institution;

iii) At least ten years' experience as a Deputy Librarian in a University Library or fifteen years' experience as a College Librarian; and

iv) Evidence of innovative Library Service and organisation of published work.

GENERAL INSTRUCTIONS :

NOTE : The University reserves the right to fill or not to fill any or all of the advertised posts.

1. The prescribed application forms together with a copy of detailed advertisement containing details of qualifications prescribed etc., can be had from the Registrar, Gulbarga University, Gulbarga - 585 106, on production of Bank Challan for having paid Rs. 50.00 towards application fee in the State Bank of Hyderabad, University Campus Branch, Gulbarga.
2. Outstation candidates desirous of obtaining application forms by post should send Demand Draft of requisite fee drawn in favour of the Finance Officer, Gulbarga University, Gulbarga, with a requisition and self-addressed cover measuring 25 cms x 15 cms duly affixing postal stamps of Rs. 10.00.
3. Copies of publication and true copies of testimonials/certificates/marks cards should be enclosed in eight sets, which will not be returned. Those who are in employment should send their applications through their present employer.
4. Reservations have been made in accordance with the Government Orders issued from time to time and also in accordance with the provisions of the Karnataka State University Act, 1976. Applicants claiming the benefit of reservation shall enclose the certificate issued by the competent authority not older than one year.
5. 30% reservation is applicable for women candidates as per Govt. Order No. ED 156 UNI 91 dt. 8.1.1992.
6. Persons below 18 years of age and above 60 years need not apply. Incomplete applications are liable to be rejected.
7. No TA/DA will be paid to the applicants either for attending interview or for joining the service, if selected.
8. Candidates selected should be prepared to work anywhere in Gulbarga University jurisdiction.
9. Canvassing directly or indirectly will disqualify the candidature.

REGISTRAR

POSTGRADUATE INSTITUTE OF MEDICAL EDUCATION AND RESEARCH

COLLEGE OF NURSING

CHANDIGARH

ADMISSION NOTICE

Applications, on prescribed form, are invited from unmarried female candidates for admission to B.Sc. nursing (4 years) course for the session 1992-96 starting from 7th July, 1992.

ADMISSION QUALIFICATIONS

10+2 examination passed of the Panjab University with Physics, Chemistry, Biology and English or any other examination recognised by the Panjab University as equivalent thereto. Candidates appearing in the said examination to be held in April-May, 1992, can also apply but they will be admitted to the entrance test only if they furnish the proof of their having passed the examination by 26-6-1992.

AGE LIMIT : Not less than 17 years and not more than 25 years as on 31-12-1992.

NO. OF SEATS : 50 General : 39 Reserved for Scheduled Caste/Tribes : 11

STIPEND ADMISSIBLE : Selected candidates will be granted stipends at the rate of Rs. 100/- p.m. for three years and Rs. 200/- during the fourth year. They will have to execute service bond which, inter alia, provided that they will serve the Institute/Government for a period of three years after successful completion of the course.

1. Application forms along with prospectus are obtainable on written request, addressed to the Principal, College of Nursing of the Institute, accompanied by a self-addressed envelope (size 23 x 13 cms.) with postage stamps of Rs. 5.00 affixed thereon for supply of ordinary post and Rs. 12/- for registered post and a postal order for Rs. 15/- as the cost of form drawn in favour of the Director, Postgraduate Institute of Medical Education and Research, Chandigarh. Application form can also be obtained on cash payment of Rs. 15/- only at the counter.
2. Candidates will have to appear in the selection test at Chandigarh at their expense.
3. Interim enquiries will not be entertained.
4. Those applying for the reserved seats must append with their applications, a certificate from the District Magistrate/Tehsildar/District Welfare Officer concerned in support of their claim. No other certificate will be entertained.
5. The number of seats mentioned above is subject to variation without prior notice.

CLOSING DATE FOR THE RECEIPT OF APPLICATION IS 8TH JUNE, 1992

GULBARGA UNIVERSITY
GULBARGA

No. GUG/ADM-1/91-92/6263

Date: 30.3.1992

NOTIFICATION

SUB: SPECIAL RECRUITMENT FOR SC/STs
REF: 1. This Office Notification No. GUG/ADM-1/91-92/441 dt. 14.6.91.
2. Govt. Order No. DPAR 11 SBC 90 dated 4.5.1990.

Applications in the prescribed form in Eight Sets are invited from qualified SC/ST candidates of Indian Nationality for the following teaching posts in various P.G. Departments of Gulbarga University. The applications together with necessary documents should reach the Registrar, Gulbarga University, Gulbarga - 535 106, by Registered Post on or before **4th May 1992**. The details of posts are as under:

Sl. No.	Name of the Posts & Scale of pay	Departments	SC	ST	Total	Remarks
1.	PROFESSORS (4500-150-5700-200-7300)	Mathematics	1	1	2	*Back-log vacancies. Remaining are current vacancies.
		Kannada	-	1	1	
		English	1*	-	1	
2.	READERS (3700-125-4700-150-5700)	Commerce	1	-	1	**One post of Reader notified on 14.6.91 as single post is now classified & reserved for SC as per Roster system
		Appd. Electronics	1	-	1	
		Mathematics (Computer Sc.)	1	-	1	
		Zoology	1	-	1	
		Botany	1**	1	2	
		Pol Science	1	1	2	
		English	-	1*	1	
		Analytical Chemistry	-	1	1	
		Physical Chemistry	-	1	1	
		Microbiology	1	-	1	
3.	LECTURERS (2200-75-2800-100-4000)	Applied Electronics	1	1	2	
		Biochemistry	1	-	1	
		Physics	-	1	1	
		Mathematics	1	-	1	
		Mechanical Engineering	1*	-	1	
		Electrical Engineering	-	1*	1	
		Geo-Physics	1*	-	1	
		Hindi	-	1	1	
		Marathi	-	1	1	
		History	1	-	1	
		Library & Infn. Science	-	1*	1	

Candidates who have already applied for the posts in response to this office notification referred to above need not apply again. Additional information, if any, may be forwarded to the Registrar, Gulbarga University, Gulbarga.

QUALIFICATIONS:

The General Qualifications prescribed for the above posts are as per UGC norms.

1. PROFESSOR:

An eminent scholar with Doctorate degree and published work of high quality actively engaged in research. About ten years' experience of teaching and/or research. Should have guided candidates for research degree at Doctorate level successfully.

OR

An outstanding scholar with Doctorate degree and established reputation who has made significant contribution to knowledge.

2. READER:

Good academic record with a Doctoral Degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

About five years' experience of teaching and/or research provided that at least three years worked as Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding records of Teaching/Research.

3. LECTURER:

(a) Good academic record with Master's Degree in a relevant subject with at least 55% marks or its equivalent grade from an Indian University or an equivalent degree from a foreign University. Ph.D. in the relevant subject is desirable.

(b) Two years of teaching and/or research experience in relevant subject.

GENERAL INSTRUCTIONS

NOTE : The University reserves the right to fill or not to fill any or all of the advertised posts.

1. The prescribed application forms together with a copy of detailed advertisement containing details of qualifications prescribed etc., can be had from the Registrar, Gulbarga University, Gulbarga - 585 106, on production of Bank Challan for having paid Rs. 25.00 towards application fee in the State Bank of Hyderabad, University Campus Branch, Gulbarga.
2. Outstation candidates desirous of obtaining application forms by post should send Demand Draft of requisite fee drawn in favour of the Finance Officer, Gulbarga University, Gulbarga, with a requisition and self-addressed cover measuring 25 cms x 15 cms duly affixing postal stamps of Rs. 10.00.
3. Copies of publication and true copies of testimonials/certificates/marks cards should be enclosed in eight sets which will not be returned. Those who are in employment should send their applications through their present employer.
4. Reservations have been made in accordance with the Government Orders issued from time to time and also in accordance with the provisions of the Karnataka State University Act, 1976. Applicants claiming the benefit of reservation shall enclose the certificate issued by the competent authority not older than one year.
5. 30% reservation is applicable for women candidates as per Govt. Order No. ED 156 UNI 91 dt. 8.1.1992.
6. Persons below 18 years of age and above 60 years need not apply. Incomplete applications are liable to be rejected.
7. No TA/DA will be paid to the applicants either for attending interview or for joining the service, if selected.
8. Candidates selected should be prepared to work anywhere in Gulbarga University jurisdiction.
9. Canvassing directly or indirectly will disqualify the candidature.

REGISTRAR

GULBARGA UNIVERSITY
GULBARGA
(Administration Branch)

No. GUG/ADM-1/91-92/6275 **Date: 31.3.1992**

NOTIFICATION

Applications in 06 (six) sets in the prescribed form are invited from the eligible candidates for appointment to the following posts in Gulbarga University, Gulbarga. The applications should reach the Registrar, Gulbarga University, Gulbarga - 585 106, on or before **11.5.1992** along with Indian Postal Order/Demand Draft/Bank Challan for Rs. 18.00 drawn in favour of Finance Officer, Gulbarga University, Gulbarga. The candidates who desire to have the application forms by post should send a self-addressed envelope to the Registrar, Gulbarga University, Gulbarga, affixing postage stamps of Rs. 10.00.

Reservations to SC/ST and other backward classes have been made in accordance with the Government orders issued from time to time and also in accordance with the provisions of the Karnataka State Universities Act, 1976. Reservation for women candidates is 30% as per Govt. Order No. ED 156 UNI 91 dt. 8.1.1992.

1. Candidates who have already applied for the posts is response to earlier Notification No. GUG/ADM-II/EST(NT)/89-90/1353 dt. 24.4.1989 need not apply again. Additional information, if any, may be forwarded to the Registrar.

Any clarification regarding the advertisement may be had from the Registrar, Gulbarga University, Gulbarga - 585 106.

The details of posts and the categories for which reservation is made are as under:

Sl. No.	Name of the Post & Scale of Pay	No. of Posts	Category	Qualification Prescribed
1	2	3	4	5
1.	Deputy Registrar Rs. 3170-4430	01	GM	a) First Class Master's Degree of an Indian University. b) Administrative/Academic experience of not less than 10 years in a Govt. Dept. or Educational Institution.
2.	Assistant Registrar Rs. 2200-4070	01	GM	a) Graduate with good academic record. b) Administrative experience of not less than five years in a Govt. Dept. or in an Educational Institution.
3.	Officer Superintendent Rs. 1900-3650	03	SC-1 Gr.B-1 GM-1	a) Degree of a recognised University. b) Pass in the SAS Exam. in case of Supdt. (accounts) c) Experience of not less than three years in a supervisory capacity in a Govt. Department or in an Educational Institution.
4.	Asst. Office Superintendent Rs. 1600-2990	04	GM-1 Gr.C-1 Gr.D-1 GM-1	a) A degree of a recognised University. b) 5 years' experience in office work or in an Educational Institution.
5.	Asst. Engineer	01	SC-1	a) A degree in Civil/Electrical Engg.
6.	Instrumentation Technician Rs. 1720-3170	01	GM-1 (Single Post)	a) M.Sc. (Applied Electronics) B.E. (Electronics)/M.Sc. (Physics) with specialisation in Electronics OR B.Sc. with Diploma in Electronics.
7.	Museum Curator Rs. 1720-3170	01	GM-1 (Single Post)	a) B.Sc. Degree with Botany, Zoology & Chemistry or Geology as optional subjects b) A Diploma or Certificate in Fine Arts, Photography, Drawings & Painting. Preference will be given to those possessing 3 years' practical experience.
8.	Manager/Head of Computer Centre. Rs. 3700-5700	01	GM-1 (Single post)	a) At least II Class Master's Degree in Computer Science/ Applications. OR At least II Class Master's degree in Science with P.G.D.C.S./P.G.D.C.A. b) 5 years' experience in University/ industry c) Broad expertise & active association in the development of Computer Sc. Programme in the Institute of higher learning d) Desirable: Ph.D. in Computer Science/Allied subjects (Maths/Stat/ Physics/Electronics/with three years' experience in University/industry.
9.	System Analyst/ System Programmer Rs. 2200-4070	01	GM (Single post)	a) At least IInd Class Master's degree in Computer Science/ Application with two years of teaching experience. OR b) At least II Class Master's degree in any discipline with PGDCS/PGDCA with two years' experience.
10.	Computer Operator Rs. 1600-2600	2	SC-1 ST-1	a) Bachelor's Degree in Computer Science/Application OR b) At least II Class Bachelor's Degree in any discipline with PGDCS/PGDCA OR

				c) At least II Class Polytechnic diploma in Computer Science OR d) Bachelor's Degree in any discipline with working knowledge of Computers.
11.	Trainee Programmer Rs. 1200.00 per month fixed (Tenure for one year)	01	GM-1 (Single post)	Bachelor's Degree in Computer Science
12.	Trainee Operator Rs. 800.00 per month fixed (Tenure for one year)	01	GM-1 (Single post)	Any Degree with working knowledge of Computers.
13.	Laboratory Attender Rs. 810-1310	01	GM-1	a) A Pass in VII Standard b) Higher Qualification preferable.

AGE LIMIT :

Every candidate for appointment to the above posts must have attained the age of 18 years and must not have attained the age of 38 years in the case of SC/ST candidates, 35 years in the case of Backward Classes and 33 years in the case of others as on the last date fixed for the receipt of the applications.

University reserves the right to fill or not to fill any or all of the advertised posts.

Applications should be sent along with the copies of all the marks cards of all the public Examinations and

a) Caste Certificate issued by the competent authority (Certificate should not have been issued prior to one year as on the last date fixed for the receipt of the applications).

b) SSLC marks card/TC/Cumulative Record extract in support of date of birth.

c) Experience Certificate.

Applications of the inservice candidates should be routed through proper channel. The Candidate, if called for interview, should appear before the Selection Committee at his/her own cost. The candidates selected will be on probation for a period of two years. Probationary period may be reduced or extended if the University so desires.

REGISTRAR

INDIAN INSTITUTE OF MASS COMMUNICATION

NEW DELHI

Applications in prescribed form are invited for the post of Professor (News Agency Journalism) in the scale of pay of Rs. 4500-7300.

Qualifications and other requirements can be seen in full advertisement.

Full advertisement can be obtained from SO(T) Indian Institute of Mass Communication, Shaheed Jit Singh Marg, JNU Campus, New Delhi - 110067, in person or by post by sending a self-addressed stamped (Rs. 2) envelope (23 x 13 cm) and application form on payment of Rs. 20 by way of Demand Draft.

Those applied in response to Advertisement No. 1634 (in April 1992) need not apply again.

Last Date: For issue of application forms: **4 May 1992.**
For receipt of completed applications: **11 May 19992.**

davp 771 (7) 91

MINISTRY OF HUMAN RESOURCE DEVELOPMENT
(DEPARTMENT OF EDUCATION)
CONFEDERATION OF BRITISH INDUSTRY OVERSEAS SCHOLARSHIP 1992-93

Applications are invited from Indian Nationals who are working in Civil Engineering, Electrical and Mechanical Engineering Industries particularly from those, who have Collaborative agreement with U.K. Firms for award of 4 (Four) Scholarships offered by the Confederation of British Industry (CBI) London, for advanced professional training in the subject fields mentioned against each:–

Group (A) **CIVIL ENGINEERING** : Structural design; transportation studies; port and harbour engineering; highway design/construction; geotechnical engg.

Group (B) **ELECTRICAL/MECHANICAL ENGINEERING** : Building services (Installations); railway signalling; communications network; software applications.

DURATION : 4-12 months

VALUE : £ 6,120 per annum (£ 510 per month). Free from U.K. Govt. Income Tax or other statutory deductions.

PASSAGE COSTS : (a) The CBI Scheme will meet the cost of Scholar's air fares to India at the end of their scholarships, provided the scholarship is for 6 months or longer; (b) The CBI Scheme will no longer meet the cost of scholar's air fares to U.K. Scholars or their employers, as the case may be will be required to confirm in writing their ability and willingness to meet this cost; (c) For scholarships of less than 6 months' duration the scholar or his employer will be required to meet the whole cost of both inward and outward fares.

MINIMUM QUALIFICATIONS : (1) Uniformly good academic record, with a first class Degree in Civil Engineering, Electrical or Mechanical Engineering. (2) Minimum of 5 years' professional experience in Engineering as on 31.3.92 with documentary evidence in the concerned fields after obtaining Degree mentioned at (1) above.

These awards are Primarily intended for young professional Engineers and not for Senior personnel or academic staff.

SPONSORSHIP : Only those candidates who are sponsored by their Employers and will return to their jobs on completion of their training in U.K. and undertake to serve their employers for a minimum period of three years are eligible to apply. Preference will be given to candidates from Public Sector Undertaking and Firms viz. Bureau of Public Enterprises, Federation of Indian Chamber of Commerce and Industries and those which receive aid and or have collaboration with industries or organisations in U.K.

AGE : Candidates should be not more than 33 years of age as on 31.8.1992. However, age is relaxable by Two Years in the case of SC/ST candidates.

NOTE : (i) Only candidates with 60% marks and above at the qualifying level are eligible. Where grades are awarded exact percentage of marks and the conversion formula of the University/Institution must be indicated. (ii) Equivalent foreign Degree are acceptable in all cases. (iii) Candidates who have already been abroad for studies/training or specilisation either on a scholarship or on their own, are eligible to apply only if they have been in India for at least three consecutive years after their return from abroad and (iv) Candidates should have sufficiently good knowledge of U.K. and India. (v) Candidates who are already abroad are not eligible to apply.

N.B. : (i) Application on plain paper in the prescribed format given below accompanied by all required documents (only attested photocopies to be enclosed) will only be entertained. (ii) Candidates who do not possess the requisite qualifications and training and other Conditions as mentioned above need not apply.

Candidates should apply for the above scholarships on a plain paper with a recent black & white passport size photograph (not colour) furnishing the following details/particulars to the Under Secretary to the Govt. of India, Ministry of Human Resource Development (Deptt. of Education), External Scholarship Division, E.S. 4 Section, A-1/W-3, Curzon Road Barracks, Kasturba Gandhi Marg, New Delhi-110 001, by **15th May, 1992.** Applications received late will not be entertained.

FORMAT OF APPLICATION

1. Name of the Scholarship Scheme:
   (a) Group-A: Civil Engineering.
   Group-B: Elec./Mec. Engineering.
   (b) Subject:
2. Name of the candidate:
   (in block letters) full mailing address with Pin Code.
   i) Address: Permanent/Present
   ii) Marital status

Recent Passport
Size photograph
duly signed to be
pasted here
only Black and
White (not
Colour)

3. Date of birth and the State to which the candidate belongs.
4. Whether a member of SC/ST if so give full particulars.
5. Academic record starting from High School/Higher Secondary onwards.

Name of the University/Institution.	Exam.(s) passed.	Year of passing.	Division/Class with position if any*.	Percentage of marks obtained.	Subjects taken.

*In case no Division/Class is awarded and only grading is done, exact percentage of marks and conversion formula adopted may be mentioned.

6. (a) Details of Professional/Practical training and research experience, specifying period and number of papers published.
   (b) Details of employment after obtaining requisite educational Qualifications with date of employment and name of Employers.

(c) Name of organisation/Firm/Industry where employed	Date of appointment	Date of leaving	Post/designation	Main duties	Scale of pay	Total pay	Reasons for leaving

7. Name, designation and address of three references who are acquainted with the work of the candidate.
8. Have you been abroad? If so, give full particulars of the country and the period. Also mention the year of return to India.
9. Proposed programme of training specifying details on a separate sheet.
10. (i) The work at present engaged in (ii) future plans/prospects after the proposed training (iii) nature and programme of training desired (iv) how are these related to the technical and economic development of India? Please enclose a write-up of about 300 words in this behalf.

NOTE : (1) Attested copies of all certificates regarding proof of age, qualification from Higher Secondary onwards must be attached with the application.

(2) Candidates must send their applications fully sponsored by their Employers. However, advance applications will be considered provisionally provided received complete in all respects, pending sponsored by employers. (N.B. The candidates called for interviews shall be required to bring letters from their refrees along with them). Incomplete applications and without sponsorship letters will not be entertained for interview.

Place: ____________ ____________________

Date: ____________ (Signature of the Candidate)

davp 92/17

THE UNITED STATES EDUCATIONAL FOUNDATION IN INDIA

"Fulbright House", 12 Hailey Road, New Delhi-110 001

ANNOUNCEMENT

Applications are invited for the following scholarships/fellowships for the 1993-94 academic year :

1. U. S. Government POST-DOCTORAL FELLOWSHIPS for independent research. Scholars permanently employed in colleges, universities and research institutions with a Ph.D. or equivalent published work are eligible. Available fields: American Life and Society in Social Sciences and Humanities; and Global Issues. Applicants must demonstrate a need to carry out research in the U. S. Age: upto 50 years, Duration: upto 7 months. Last Date: July 10, 1992.
2. U. S. Government PRE-DOCTORAL STUDY GRANTS for persons registered for a Ph.D. degree in an Indian university in areas related to the study of American Life and Society in Social Sciences and Humanities. The grants will provide opportunities for dissertation research and course work. Age: preferably not more than 50 years. Duration: upto 9 months. Last date: June 15, 1992.
3. Hubert H. Humphrey Fellowships for academic study and training for managers and administrators at decision making levels in the fields of Agriculture, Planning, Resource Management, Public Health and Public Administration and Drug Abuse, preferably first class both at bachelor's and master's level with a minimum of five years professional experience. Age: below 40 years. Duration: 10 months. Last Date: June 15, 1992.
4. Internships in LIBRARY SCIENCE/LIBRARY MANAGEMENT for permanently full time employed Librarians/Assistant Librarians with a degree/postgraduate diploma in Library Science. Age: preferably not more than 45 years. Duration: 6 months: Last Date: June 15, 1992.
5. U. S. Government Internships in ART HISTORY for scholars employed in educational institutions/museums and directly involved in teaching or research in Art and Art History. Have a postgraduate degree in Art History/History/Archaeology. Age: preferably not more than 45 years. Duration: 6 months. Last Date: June 15, 1992.
6. U. S. Government post-doctoral travel-only grants for those who have a teaching/research appointment in a U. S. university for a minimum period of three months, with assured support of at least $ 2,000 per month. Duration: 3-12 months. Last Date: (1) August 31, 1992 and (2) January 31, 1993.

For details and preliminary application forms, please write to the nearest office of USEFI specifying the program for which application forms are required, giving details of age, class and percentage of marks of all university examinations taken and present position, with a stamped (Rs. 3) self-addressed envelope, size 23 x 10 cms.

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Fulbright House, 12 Hailey Road
New Delhi 110 001

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University News

MONDAY, APRIL 27, 1992

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Making the System Work

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A Composite View of Higher Education

●

Interdisciplinary Studies and Higher Education

●

Restructuring Commerce Courses

●

Gender Sensitisation Programme

●

Teaching Science in Hindi

●

Assessing Quality in Higher Education

NATIONAL DAIRY RESEARCH INSTITUTE
(DEEMED UNIVERSITY)
(INDIAN COUNCIL OF AGRICULTURAL RESEARCH)
KARNAL- 132001 (HARYANA)

ADMISSION NOTICE – 1992-93

A competitive written examination on all India basis for admission to 1st year B.Tech(Dairy Technology), M.Sc. Dairying and Ph.D. Dairying in the following disciplines will be held at diffierent centres of the country on 23rd, 24th and 25th June, 1992.

A. **B. Tech.(Dairy Technology)**

Eligibility: 10+2 or its equivalent examination with Physics, Chemistry, Mathematics and English from a recognised Board/University with 55 percent marks (50 percent marks for SC/ST candidates) or equivalent GPA in the aggregate of Physics, Chemistry and Mathematics.

The duration of B.Tech. (Dairy Technology) is four years.

B. **M.Sc. Dairying in** Dairy Microbiology, Dairy Chemistry, Dairy Technology, Animal Genetics & Breeding, Livestock Production &Management, Animal Nutrition, Animal Physiology, Animal Biochemistry, Dairy Economics, Dairy Extension, Dairy Engineering and Animal Biotechnology.

Eligibility: Bachelor's degree with 55 percent marks (50 percent for SC/ST candidates) or equivalent GPA in Pure Sciences, Agriculture, Veterinary Science, Animal Sciences, Dairying, Food Technology, Engineering and Home Science.

The duration of M.Sc. Dairying is minimum of 3 years for Graduates in Pure Sciences and 2 years for Graduates in Dairy Technology, Agriculture, Veterinary Science and Engineering.

C. **Ph.D. Dairying in** all the above disciplines as in 'B' except Animal Biotechnology.

Eligibility: Master's degree with 55 percent marks (50 percent for SC/ST candidates) or equivalent GPA in Dairying, Agriculture, Veterinary Science, Biotechnology, Pure Science, Food Technology, Engineering, Home Science etc.

The duration of Ph.D. Dairying is minimum of 3 years, which includes one year of course work.

Reservation: Fifteen percent of total seats in each programe are reserved for Scheduled Caste and 7.5 per cent for Scheduled Tribe candidates subject to their being otherwise eligible.

Last date for receipt of applications completed in all respects and accompanied with the prescribed examination fee in this office is **30th May, 1992.**

How to Apply: Information Bulletin containing all details along with prescribed application form can be obtained by post from Joint Director, National Dairy Research Institute, Karnal - 132001(Haryana) by submitting a Bank Draft for Rs.25. The Bank Draft should be drawn in favour of "ICAR UNIT, NDRI, KARNAL" on any nationalised Bank at Karnal. Indian Postal Orders or Money Orders will not be accepted. Information Bulletin and Application form will be avalable by post from 24.4.92 to 26.5.92.

Information Bulletin and application form are printed for B.Tech, M.Sc. and Ph.D. courses separately. The candidates while submitting the demand draft for Rs. 25/- should clearly specify for which specific course he requires the Information Bulletin and Application Form.

While requesting for Information Bulletin and Applicatin Form following information should be given:

1. Name (in capital letters)
2. Full address with PIN code (in capital letter)
3. The Course in which the candidate wants admission (State only one of the following : B.Tech./M.Sc./Ph.D.)
4. Details of the Bank Draft enclosed.

The Information Bulletin and Application Form can also be obtained in person from the Institute Counter by submitting a bank draft for Rs.25/-. This material will be available at the counter until 30th May, 1992.

Note: Those who have appeared at the qualifying examinations and awaiting for the final result can also apply. But the marks and result of the qualifying examination should be submitted to the Joint Director, N.D.R.I., Karnal-132001 positively by the date stipulated in the Information Bulletin.

UNIVERSITY NEWS

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Editor :
SUTINDER SINGH

Making the System Work

Shivendra K. Verma*

Educationists, administrators, and politicians have presented their own perceptions of "making the system work". Underlying all their perceptions there appears to be a deep-seated belief that there does exist a system which has either become sluggish or defunct and that there are some magicians in the country who know how to make the system work.

I too believe that underlying all the chaos, corruption, nepotism, favouritism, regionalism, casteism & groupism that we see functioning around us there must be a system, a pan-Indian linking force which has saved the country from getting completely uprooted and chopped up into pieces by fissiparous tendencies.

It may be useful at this point to look around for a possible answer to a basic question : How does a system work or what makes a system work? This question can be answered in two parts : (1) a system can work efficiently only if the setting in which it functions is healthy, that is, it derives its generative power from a physically, economically, morally, and politically healthy setting ; (2) a system can work efficiently only if its constituent members are allowed to interact with one another without any pressure coming from outside the system. It is the system that assigns roles and functions with values attached to them to its constituent members.

Since I have been working as a teacher for 41 years and as a teacher-cum-administrator for the last seven years, I can try to rip open the system that has produced me to see how it works today.

1. The setting in which the system is working is designed by those people who are good at moving counters on a political chessboard but their self-imposed blinkers do not allow them to see that it is the rules that create a game and an umpire who is assigned the task of interpreting the rules. No system can work in a cancerous setting.
2. No system can work if roles, functions, and values are imposed on its constituent members by those agencies which are triggered into action by extrasystemic considerations.
3. What has been stated in (1) and (2) has brought about a corrosive change in the value-system. Some of the statements made and questions asked by the members are listed below :
    (a) What are the extrasystemic contacts that I must establish to get out of the present system and get into a 'bigger' system? I am working for the system and in the system not because I am interested in the healthy growth of the system but because it enables me to have access to the corridors of power leading the way to the staircase taking me to upper/higher floors.

    (b) The system can grow if it works in a time-frame and output- frame but its members have been trained to work in a personal frame which, if paraphrased, will mean "this is my perception of my responsibility in terms of output and hours of work".

Director, Central Institute of English and Foreign Languages, Hyderabad 500 007.

(c) Here is a new assignment. If it is done well, it will act like a booster to the system. The normal response of the members of the system today to this type of proposal is : Will it act like a booster to me in terms of promotion and/or getting an honorarium or taking me to places preferably to foreign countries? (Reason: Routine work is all work and no fun).

(d) An efficient system must have an effective and functional sieve built into it capable of throwing out non-generative and defunct constituents. Unfortunately the function of the sieve (if any) is determined by forces outside the system.

(e) Your movements in a system today are guided not by the quality and quantum of work you are doing but by what you are: your caste, your group-affiliations, your 'approach', your 'pairvi' .....In spite of all that has been said our systems appear to be working, but please note that every 'move' has a price-tag attached to it.

(f) The members of the system, I must say, have a lot of potential for showing excellent performance but the setting has made them indifferent and defunct.

(g) Do the powers controlling the setting have the courage to introduce productivity-oriented any excellence-directed rules which may mean modifying the activities of the Unions?

I have my doubts and I am left with the question unanswered : Are the power-propelled 'supersystems' even remotely interested in making the systems work?

Compendium of Postgraduate Studies in Psychology in the UK and Ireland

Compiled by Professor David Canter (University of Surrey)
in conjunction with the Association of Heads of Psychology Departments

The who's who and the what's where of UK psychology research

The first comprehensive database of all postgraduate psychology departments and research institutes

All mainstream psychology departments are included, together with addresses of cognate departments such as medicine, social work, psychiatry and health care, education, personnel management, IT, ergonomics and statistics.

The **Compendium** is fully indexed both by subject and by name. Anyone seeking authoritative and up-to-date information on an institution, individual or area of interest will find this an invaluable reference source.

Readership: anyone with an interest in postgraduate psychology, its applications, its practitioners and their institutions - academic and reference libraries, psychology departments, medical libraries and the media.

Date of publication: March 1992
ISBN: 1 85433 062 4; hardback
Price: £35 plus £7 postage & packing. Please pay in sterling or with an international bankers draft drawn on a London bank

Complete details are included under the following headings:

- contact name, address, phone number, etc.
- students
- staff
- lab facilities
- computing facilities
- animal labs
- special equipment
- facilities for students with a handicap
- current research
- postgraduate taught courses
- postgraduate degrees by research
- fees

BPS BOOKS THE BRITISH PSYCHOLOGICAL SOCIETY

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A COMPOSITE VIEW OF HIGHER EDUCATION

C. R. Mitra*

I. Definition of Terms:

HE = Higher Education = All education and training at the post secondary stage.
TE = Technical Education = Engineering, technology, management, commerce, architecture, pharmacy, etc.

BD = Bachelor's Degree = BA/BSc/BCom
FD = First Degree = BE/MSc/MA/MCom
HD = Higher Degree = ME/MPhil
DD = Doctorate Degree = PhD/DSc

II. Broad Mapping of Higher Education

- This exercise is for the academic aspect rather than economic or societal.
- This exercise identifies two delivery systems.

(A) *First delivery system*

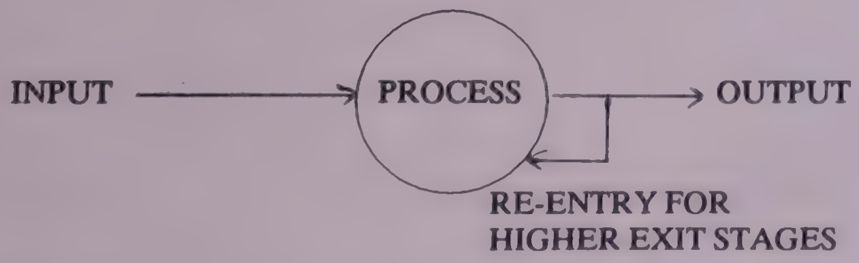
- visible, known and chosen
- estimated size = 30 lakhs
- All education and training leading to degrees/diploma/certificates recognised by government for recruitment and/or promotion.
- For example, university, IIM, exam of professional societies.

(B) *Second delivery system*

- invisible, unknown, not chosen
- estimated size = 5+ lakhs
- All education and training leading to certificates acceptable, by convention, by World of Work.
- Prepares students for a profession/vocation/occupation in a competitive market.
- For example, inhouse structured training by large organised industries (private and public); established large training industries.

III. Systems Diagrams of the two systems for TE

- It is over-simplified to focus on similarities rather than dis-similarities.
- It treats only TE because of recognised need of graduates.
- Sciences/Social Sciences/Liberal Arts are not included. Here the picture is much more amorphous and ambiguous in the first system and nearly non-existent in the second system.



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*Former Director, Birla Institute of Technology and Science, Pilani (Rajasthan).

	First System	*Second System*
Input:	(10+2) or BD	(10+2) or BD
Output:	BD/FD/HD/DD, Diploma, Certificates	Certificates
Process Characteristics:		
Emphasis	Concept	Application
Knowledge	Substantive(fundamentals)	Operative(practical)
Skills	Mathematical, communicational, reasoning, analytical(abstraction-dominant)	Operational, managerial, synthesis, computational(routine-friendly)
Duration	Convention-bound	Contextual
Exit Stages	Limited & interconnected	Fragmented & not interconnected
Curriculum	Pre-fixed	Open-ended
Academic Structure	Prototype design	Creative design
Habitat	Isolated in World of Study	Immersed in World of Study & Work
Metaphor	Theory without practice	Practice without theory

IV. Ways to invigorate

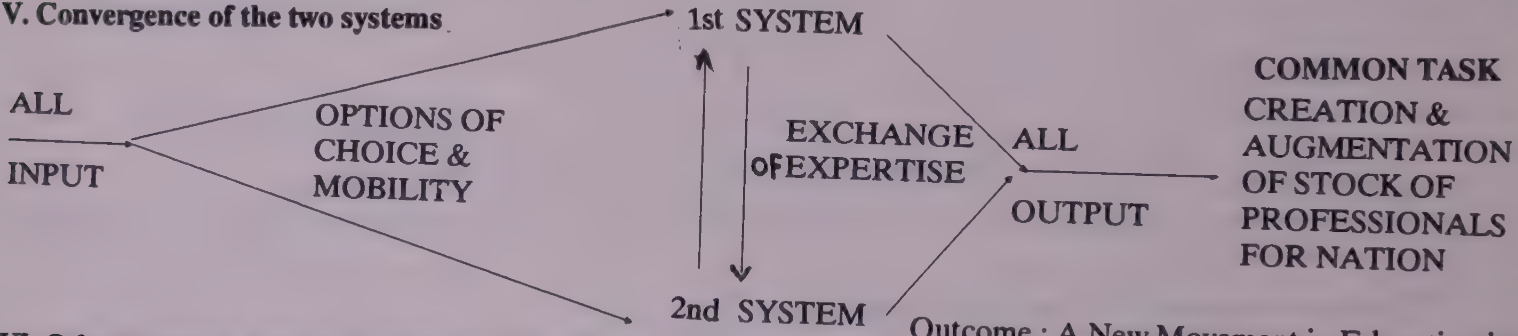
(A) *First System*

- (i) Establish University-Industry linkages (emulate medical education)
- (ii) Discard bookish learning
- (iii) Phase out BD

B) *Second System*

- (i) Infuse theory
- (ii) Rationalise duration and number of Exit Stages
- (iii) Move into main stream of education

V. Convergence of the two systems


1st SYSTEM
ALL
INPUT
OPTIONS OF CHOICE & MOBILITY
EXCHANGE OF EXPERTISE
ALL
OUTPUT
COMMON TASK
CREATION & AUGMENTATION OF STOCK OF PROFESSIONALS FOR NATION
2nd SYSTEM

Outcome : A New Movement in Education in Ind

VI. Other Spin-off benefits (mainly non-academic)

- (i) Advent of a chunk of HE with no financial dependence on government. Revenue from taxes continue.
- (ii) Emergence of viable and acceptable vocational degrees.
- (iii) Assertion of cost-effectiveness.
- (iv) Dawn of market perception and accountability.
- (v) Emergence of much-needed management technique for HE.
- (vi) Towards universal access and awareness of scales of operation.
- (vii) New ingredients for design of :
  - a) Adult Education
  - b) Literacy Mission
  - c) Distance Learning
  - d) Life Long Education

VII. A Key Strategic Step

* Conferment of academic status to the second system as in the first.

Through

- – A slow roll-out.
- – Naturalisation of a group of mature providers in Higher Education in one stroke to enter and function within the chosen system.

Interdisciplinary Studies and Higher Education

P.H. Sethumadhava Rao*

Nature and Significance

When two or more established disciplines interact and collaborate for a better understanding of social or physical phenomena, or in the solution of some real problem, we call such an effort interdisciplinary. Another term, multidisciplinary is often used in almost the same sense, but the term interdisciplinary seems somewhat better because it connotes also the interaction between disciplines in addition to the harnessing of the resources of several disciplines.

The development of science in recent decades has shown that a growing internal specialisation of individual disciplines and the increasing differentiation of science in general requires an increasingly interdepartmental interdisciplinary approach. Interdisciplinarity opens possibilities of exchange between individual disciplines, but also lends more transparency to the connections between the disciplines and encourages the development of interdisciplinarity, methodological concepts and models of explication. Interdisciplinary research thus both intensifies specialised research and offers models of synthesis which are of central importance. The need for interdisciplinary has been reflected in epistemological (theory of knowledge) writings ever since the origins of western sciences. The trivium (grammar, rhetoric &dialectic) combined with quadrivium(arithmetic, geometry, astronomy & music) to form a unified whole included both letters and the sciences. Prof. Navo outlines in his paper "Interdisciplinarity theory & Practice", the need for a change in the philosophy and methodology of the educational system. The educational system needs a radical change in the objectives, structure and methodology concordant with the emerging theory of Cosmic Evolution. Interdisciplinarity is an important methodology that can substantially contribute to these goals. An interdisciplinarity approach helps to encourage a healthy pluralism, intellectual generosity, integrity and interdependence – all of which are essential to a sound democratic process and to the promotion of peace and prosperity.

The importance of interdisciplinarity studies and research is being recognised more and more because it is becoming increasingly clear that reality, whether physical or social, is too complex and multi-dimensional to be adequately understood and purposefully manipulated by any single discipline. Problems, both theoretical and practical, do not fit in neatly into the artificially created compartments of separate disciplines. With the growth of knowledge also, various phenomena which were earlier considered to be the exclusive domain of particular disciplines have to be opened up for the light thrown from many angles by various developments in a number of disciplines.

For instance, the functioning of human body and the brain is being understood better through inputs from various disciplines such as Chemistry and Physics. Advances in the cure of ailments too become possible only through collaboration among a number of disciplines both theoretical and applied.

The same is true of social phenomena such as crime. For its proper understanding and prevention concerted interdisciplinary effort encompassing number of disciplines such as sociology, psychology, law and political science is called for.

An interesting example of the value of interdisciplinary research work is provided by protracted collaboration between a Sanskrit scholar and a sociologist. It began in response to the need for finding out the nature of traditional Indian Judicial values and later developed into a larger study of the dynamics of the Indian sociocultural system as a whole.

In the year 1970, ICSSR constituted a committee on law and social change. It consisted of eminent jurists like Justice Gajendragadkar and Justice V.R. Krishna Iyer, outstanding law teachers such as Prof. G.S. Sharma and some social scientists like Prof Yogendra Singh and Prof Indra Deva. In this committee, Prof G.S. Sharma forcefully putforth the view that the judicial system that exists in India now, does not conform to traditioal Indian Judicial values. Naturally, the question arose as to what traditional Indian Judicial values were. All the jurists and scholars said that they did not in fact know the exact nature of traditional judicial values and institutions. It was suggested that this should be explored through collaborative efforts of a Sanskrit scholar and a sociologist. Consequently, the ICSSR research project

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**Professor of Interdisciplinary Studies (Humanities & Social Sciences), University of Poona, Pune.*

on "Judicial Values and Institutions in Indian Tradition" was carried out by Prof. Indra Deva(Sociologist) and Dr Sri Rama (a Sanskrit scholar who had done her doctoral research work on Later Smrities which are the most sophisticated texts of Indian jurisprudence). This interdisciplinary project was a great success. Its report was highly praised and adjudged as "Outstanding" by eminent jurists. the ICSSR, therefore, brought it out on its own in a book from: "Growth of Legal System in Indian Society"(ICSSR/Allied, 1980). This also shows that interface between disciplines belonging to two different faculties (Arts and Social Sciences) illuminates another discipline belonging to a third faculty i.e. Law. The success of this interdisciplinary project paved the way for ambitious interdisciplinary research which sought to bring out the genesis and shaping of various traditional institutions and values through sociological analysis of Sanskrit texts. This was not possible without continued collaboration between a Sanskrit scholar and a sociologist. Left alone, a Sanskrit scholar cannot interpret the texts from a social science angle, and a sociologist has no direct access to original and complete texts so that he has to depend upon highly selective quotations which lead to a very distorted picture.

Aristotle was one of the earliest thinkers in many fields like politics, aesthetics, logic, rhetorics and even biological sciences. The need is that various disciplines must mingle either in one person or in an institution. But also, there should be interaction among different disciplines. The structuring of the Jawaharlal Nehru University is based on the philosophy of interdisciplinary endeavour. In ancient times, whether in India or Greece, scholars were supposed to have knowledge of all basic disciplines like classical language, its grammar, philosophy, astronomy, logic and so on. Even the poets and artists were not excluded from it. It would be useful if we start interdisciplinary studies within a department where such potential exists.

Disciplines and Interdisciplinarity

Joseph Kiger defines disciplines as a recognised branch or segment of knowledge with rational leanings, with certain generally agreed upon standards. The University is a product of the middle ages; neither the Greek nor the Roman had universities and what we now know as a university had its beginning in the 12th century. In Paris, for example, the University had four faculties, Arts, Law Medicine and Theology. Oxford and Cambridge had very close ties to Paris before separating themselves. What we now call disciplines and specializations are the products of the 19th centuries. Their development is linked to the evaluation of the natural sciences. We can certainly say that advancement of knowledge requires specialisation and departmentalization as well as free and easy cross fertilisation.

Humanities

It would be useful to define the term humanities and its function with respect to interdisciplinary activities. There is abundant literature on the humanities dealing with their cultural, philosophical, historical, administrative, social and political aspects. In Latin language since Cicero's time, the word humanities had a normative function. It has been used for the qualities, dispositions and modes of behaviour of the human beings. Since the early Middle Ages the humanities have concerned themselves predominantly with Latin and Greek literature and philosophy.

The Humanities in the Twentieth Century

During the first half of the 20th century, the entire educational system of the West underwent a profound change that was to lead our contemporary conception of education and the place the humanities have in this much larger whole. Several factors influenced this enormous change viz. proliferation of our scientific knowledge, our advanced knowledge in various fields which demands specialization, development of behavioural and social sciences, etc. Thus, the distinction between humanities and social sciences have become problematic and has been debated over years.

In contemporary American universities, the expression —'the humanities' refers to a group of disciplines that cannot be included in the divisions of natural and social sciences nor in those disciplines taught in professional schools. The humanities today comprise history, literature, fine arts, rhetoric and philosophy. Most authors believe that the humanities provide a distinct kind of knowledge.

Some scholars believe that we should make a difference between humanities and the sciences on the ground that the world of learning must be divided into humanities or arts on the one hand and the sciences on the other. The distinction between arts and science reflects a basic split within the structure of the human mind. In some universities, the humanities are no longer taught by the various academic departments; instead, unified courses or programmes in the humanities are being offered as a better way of meeting the real needs of the students. In some instances, interdisciplinary graduate programmes in humanities have been created to prepare teachers for undergraduate teaching in the humanities.

Humanities and Interdisciplinarity

The humanities refers to a group of educational disciplines that aim towards the maturation of the person both as an individual and as a citizen. The humanities include concern with languages, literature, fine arts, history, rhetotic and philosophy. All these disciplines have a common cultural heritage.

The relationship between the humanities on the one hand and theology, philosophy and some sciences on the other has always been paradoxical. The humanities respond to our individual need for orientation in regard to cultural heritage, reasonableness through critical reflection and human expression. It is felt that those who teach in arts and humanities must be acquainted with insights from behavioural and social sciences and hence there is a need to encourage interdisciplinary studies. In each discipline, irrespective of the fact whether it is humanities or social sciences, one should pay attention to its research, educational and administrative aspect. In literature, some people are concerned with interdisciplinary research projects, other with educational or administrative innovation. Humanities play a very typical role in our educational system and for that reason the term interdisciplinarity has received a special connotation not found in natural sciences and social sciences. In the present day, there are problems connected with specialisation, professionalisation and departmentalization of the sciences.

Studies in areas like Poverty, Pollution, Population, etc., are trans-disciplinary in nature.

Main issues where interdisciplinary research could be undertaken are: a. Geopolitical Issues b. Political Development & Change; c. Social Stratification, Status & Powers; d. Distribution & Equality of Material, Living Standards & Wealth; e. Social Values & Perception; f. Action, order & conflict; g. Social Sciences & Welfare; h. Food & Nutrition i. Health; j. Work; k. Leisure;. l. Education; m. Shelter; n. Transport; o. Energy Issues; p. Materials & Research Issues; and q. Environment.

Strategies for Encouraging Inter-disciplinary Research

Interdisciplinary Communication depends on a high degree of open mindedness and curiosity on the part of the teachers & students and an ability to anticipate and welcome new and perhaps surprising ideas.

In the tertiary sector, institutions are necessary, which as in interdisciplinary research, scientifically develop courses in interdisciplinarity. This required cooperation between scientists and practitioners.

Interdisciplinary programmes could be taught in the form of team teaching. On the part of students, interdisciplinary learning would require a solid knowledge of their fields. In view of this, interdisciplinary courses would be practicable only with advanced students.

Interdisciplinary courses should play a more important role in postgraduate studies. Graduates who have a degree and some professional experience often recognise more easily the possibilities of connections between disciplines and of interdisciplinarity exchange between disciplines.

Problem-oriented projects based on multi-disciplinary or interdisciplinary approaches have a high degree of success, and their achievements should be made known to a wise public so as to encourage further experience of this kind.

Area Studies Programmes by their very nature are interdisciplinary in character. These studies aim at producing a group of scholars who would be continuously engaged in the study, examination and assessment of the principal contemporary developments in specified areas specially the neighbouring countries with whom India has strong historical and cultural links. The thrust is on academic studies but the Centres could take up research on contemporary problems. The programmes are broad based and expected to cover other important areas as well.

It is important that universities and colleges try to inculcate values among their students. As much importance should be given to this as is being given to sports student theatre, debates, etc. The value implicit in the Constitution of India must be unanimously acceptable to all Indian citizens. Imparting values means multi-disciplinary approach as it involves Sociology, Psychology Philosophy etc.

Usually, when we think of promoting interdisciplinary work, we try to establish relationship between different departments or faculties of a university. While such efforts are not to be given up, experience shows that interdisciplinary work is considerably retarded because of organisational constraints and friction in spheres of authority in such dispensation.

It seems more worthwhile and economical to make room for interdisciplinary work within one Department or Centre wherever the potential exists. This should be especially kept in mind while assigning quality programmes such as those of Special Assistant and Research Assistance. It should be ensured that necessary inputs from all relevant disciplines are given adequate representation.

Restructuring Commerce Courses at Under and Postgraduate Level in Bhavnagar University(Gujarat State)

A Draft Proposal

N. M. Munshi*

Industrialisation in the country and expansion of educational facilities in the field of commerce has promoted commerce education in Indian panorama during the post-independence decades. As a result, the commerce education system and programmes have produced commerce graduates at a faster pace than the economy's capacity to absorb them. This situation has created innumerable problems for the commerce education itself, consequently, commerce education in our country has been a subject of criticism from many quarters. In spite of severe criticism, it should be noted that the relevance of commerce education is felt more today than in the past.

Commerce course contents are desired to be framed up to study the relationship between the business framework of the economy and the various economic, social and environmental forces, and their relationship to each other. But unfortunately, the course contents in most of the universities in our country are composed of wide varieties of subjects for both under and postgraduate courses and as such no concerted action towards specialisation in any particular subject or field could be undertaken. The syllabi of various conventional courses are full of shortcomings. Traditional formal system of education has failed miserably to fill up the gap between what is taught and what is needed.

Therefore the urgent need of the day is to emphasise more on specialisation while restructuring the course of studies for commerce education. The education imparted to the students of commerce should aim to equip them with the specialised skills useful in different functional areas of trade, commerce and industry. The universities have to play a very important role in the development of commerce education with greater emphasis on specialisation of the subjects. Complete reorientation and professionalisation as well as specialisation approach for the commerce course is very essential. This requires sustained coordinated efforts on the part of the universities and the various professional institutions. For this obvious reason UGC felt the need of restructuring courses and the UGC Curriculum Development Centre in Commerce was entrusted with the work of restructuring and reframing the various university level courses in commerce. This was probably the first exercise on the national scale in India to restructure commerce courses to make them updated and more meaningful.

There is no difference of opinion among the professors, experts and businessmen that the existing conventional courses are old and worn out. Of course some universities have taken few steps to revamp the business education, e.g. starting of MBA cours or Diploma courses, but these are all haphazard.

Therefore, while restructuring the commerce courses following points should be given due weightage :

(1) The reasonable amount of specialisation is to be achieved in the commerce education at the graduate level. Commerce education at the PG level is expected to provide the students with an indepth knowledge of different functional areas and the academic insight.

(2) The courses of studies should be framed in such a manner that open new horizons for the research work and increase the academic value of the university.

(3) The courses of study should fulfil the basic needs of the society, so that commerce graduates may prepare themselves for professional examination and other job-oriented competitive examinations.

(4) Our colleges, and university departments of commerce (in mofussil areas in particular) are also facing acute shortage of knowledgeable and expert teachers. So the course of studies should be framed in such a manner that existing and prospective teachers have an opportunity to equip themselves with latest knowledge of the subjects through the orientation courses and training.

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(5) Training and teaching programmes would be organised to meet the knowledge gap and to promote entrepreneurship skills, and may have source of motivation from the entire process and environment to develop students, leading towards further research programmes.

(6) Commerce courses should help to maintain teacher/taught ratio at moderate level.

(7) Courses of studies should aim to follow the inter-disciplinary approach in its real sense.

(8) There is extreme starvation of managerial experts in our industrial houses. Even small and medium sized organisations are also facing acute shortage of managerial expertise. Every student cannot afford to join MBA or diploma course as there are very tough courses for an average student. Therefore mass of the students should be given an opportunity to train themselves in the courses particularly in the regional languages. Only universities can fulfil these needs of the society. The course of studies should be redefined accordingly.

(9) To create real awareness about social and economic environment of changing industrial society, we shall have to change our approach to commerce education.

The Prismatic View of Commerce Education

Commerce education involves not only the subjects of commerce discipline, but also management, banking, industries and business economics. The prismatic view of the commerce education is presented in the diagram. To make commerce education more purposeful, the committee of the UGC Curriculum Development Centre has suggested the following curriculum :

"It was decided to have two sets of courses at undergraduate level. These courses are B.Com(honours) and B.Com.(professional). Both these degrees will have common courses in the first year. There will be gradual specialisation and in the second year B.Com(professional) students will have only 50% common courses with B.Com(honours) students. In the final year B.Com(Professional) students will specialise in either of these branches, i.e. Accounting or Business Studies or Business Economics.

The number of papers and courses suggested for the two streams are as follows:

(1) B.Com.(Honours) 18 Papers in the three years

(2) B.Com. (Professional) 30 papers in three years

Specialisation in either of the three fields

At the P.G. level we have planned for three areas of studies:

(1) M.Com. Accounting 11 papers

(2) M.Com. Business Studies 12 Papers

(3) M.Com. Business Economics 11 Papers

These courses will provide specialised knowledge to students of different fields of studies and they will be able to make their contribution in the academic field if they choose. They will be able to get jobs in the growing field of industry, trade and commerce."

Pattern of Restructured Commerce Courses

In the light of the above mentioned suggestions, we propose the following pattern of the restructured commerce courses at U.G. and P.G. level.

A. At **Undergraduate level** the courses should be divided into three separate groups of subjects:

(1) *Group of Compulsory Subjects*

In this group, only those subjects should be introduced, the knowledge of which is highly essential and suits business education.

(2) *Group of Principal Subjects*

In this group only those subjects should be introduced which offer pure specialistion and professional approaches in either of these branches, i.e. Accounting or Business Studies or Business Economics.

(3) *Group of Subsidiary Subjects*

In this group, those subjects should be incorporated which enrich the professional skill and bridge the knowledge gap of the students.

B. At **Post-Graduate level** the courses should be divided into two groups of subjects:

(1) *Group of Compulsory Subjects*

In the previous year of M.Com one paper of quantitative method or Research methodology should be taught, while in the final year, one paper for Dissertation and viva should be introduced.

(2) *Group of Principal Subjects*

Three to four papers of principal subjects should be offered in continuation with the principal subjects taken at U.G. level.

The distribution of the components and subjects at various levels in the U.G. and P.G. Commerce courses is presented in annexure 1.

Methods of Teaching

At the U.G. level, theoretical subjects should be taught with an academic approach. This would provide a conceptual framework and an indepth study of the subjects. The syllabi of the subjects must contain enough theoretical and practical problems which initiate mental exercises both for the students and teachers. It should be framed in such a way that lay a foundation stone for higher level study.

At advanced P.G. level, subjects should be taught as tools of management based on academic, research and professional approaches. Syllabi of the subjects should be framed in such a manner that provide enough training to students for the job-oriented examinations and for further study leading to M.Phil and Ph.D. degrees.

The performance is influenced by the methods and systems adopted to complete a particular function. Therefore a well organised system or method should be worked out to achieve the above-mentioned predetermined goals and objectives of the commerce education. Following few points should be considered while formulating the organised system for teaching :

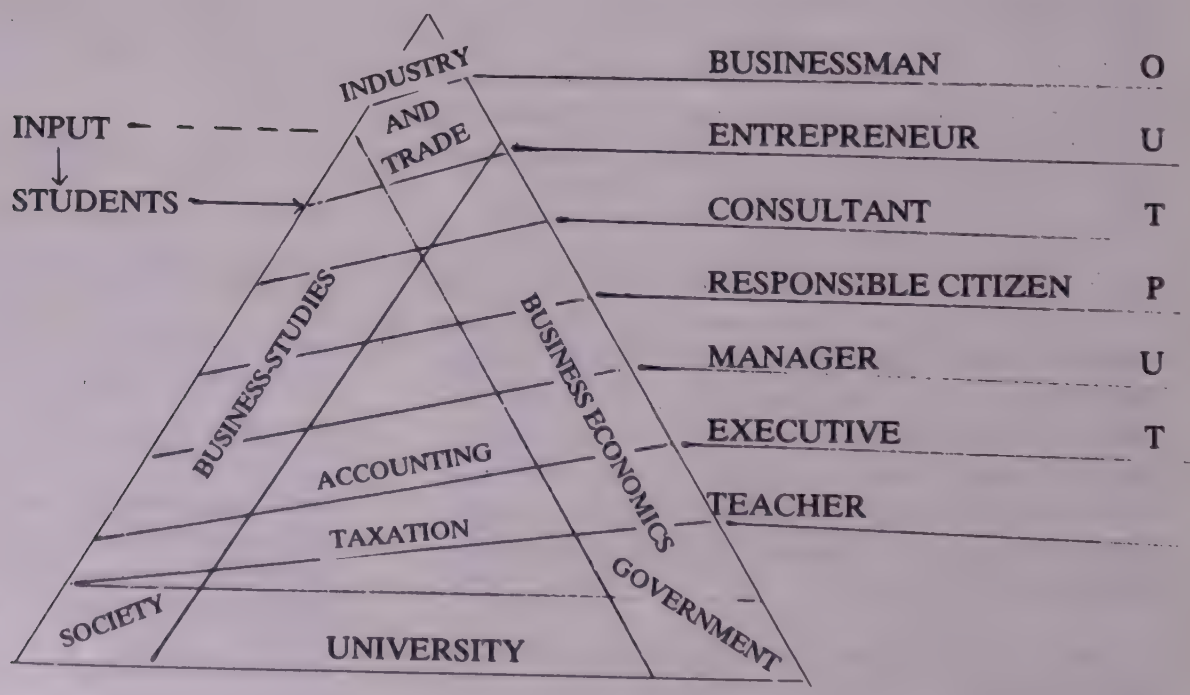
(1) Case study method

(2) Opening of Consultancy Services Centre. This centre would provide training to the students and teachers in the areas of Income-tax , Sales tax etc. This programme may be arranged with the help of Income Tax Department, consultants and businessmen.

(3) Research and Development: In this context, constitution of a Joint Research Committee may prove fruitful.

(4) Faculty Training and Development/Teachers Enrichment Programme : There is little or no scope for teachers in the colleges for career development. A teacher, who joins as lecturer, also retires as lecturer. Therefore well equipped colleges should be allowed to run P.G. teaching. This would provide opportunity to the teachers to reach up to the post of Professors during their tenure in the colleges. This would serve as source of motivation for the sincere and hard working teachers.

THE PRISMATIC VIEW OF COMMERCE EDUCATION



Annexure 1

Department of Commerce, Bhavnagar University

NEW COURSE OF STUDIES – COMMERCE FACULTY(SUGGESTED)

No.	*Class*	*Compulsory subjects*	*Principal subjects*	*Subsidiary subject*	*Total*
1.	F.Y. B.Com	English -I Business Management-I Statistics Economics Accountancy-1	Two Papers of Elected subjects Papers I & II 2	One paper of elected subjects Paper -I 1	
Total		Paper 5	2	1	08
	S.Y. B. Com	English-II B.M ......II.. Accountancy II Managerial Economics Business Law	Papers III & IV 2	Paper-II 1	
Total		Papers 5	2	1	08
	T.Y. B.Com	English ...III	Six Papers V to X	-- Nil--	
Total		Paper 1	6	--Nil --	07
Total		Compulsory - 11	Principal...10	Subsidiary 2	23

NB:

(1) Papers of the following branches may be offered as principal subjects.

	Students input on Merit
(1) Business Studies	40%
(2) Business Economics	10%
(A) Banking and Industry	
(B) Economics	
(3) Accounting-Taxation-Auditing	50%

(2) Papers of the following subjects may be offered as subsidiary.

(1) Statistics, Maths I & II
(2) Insurance I & II
(3) Secretarial Practice I & II
(4) Two Papers of Principal Subjects
(5) Information Technology and Computer Application I & II

POSTGRADUATE LEVEL

No.	Class	Compulsory subject	Elective subject	Total
	M.Com I	Research Methodology ...1	Three Papers of Principal subjects opted at UG level 11 to 13 3	
	Total	1	3	04
	M.Com. II	Dissertation & Viva 1	---"--- 14 to 16 3	
	Total	1	3	04
	Total	Compulsory ..2	Elective 6	08

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Looking to Youth

Eminent scholar and veteran parliamentarian, Prof. Hiren Mukerjee delivered the Convocation Address at the 36th annual convocation of the Jadavpur University, Calcutta. He said, "As one who is in the over-eighty age bracket and lives therefore on borrowed time, I have hardly the right, from today's youth, to anything but the order of the boot. I recall however, an Oxford meeting some sixty years ago, when George Bernard Shaw, berated by an undergraduate for the failure of Shavian prescriptions for the remedy of the then world's ailments, replied with a twinkle in his eye that if the old solved all problems the younger generation would be unemployed. The likes of us, have much to answer for. But the cross will have to be borne by those who are young, never forgetting — if you permit this slide into solemnity — that "Freedom's battle once begun/Bequeathed from bleeding sire to son/Tho' vanquish'd oft/ Is ever won." Excerpts

Yours, I dare say, is a University with a difference, for just being here is a spur to patriotic reflection. Shedding the easy-to-wear mask of snooty superiority, 'let us praise our famous men' — Rabindranath Tagore and Aurobindo Ghosh, Subodh Malik and Sakharam Ganesh Deuskar, Rashbehari Ghosh and Taraknath Palit and the patriot-philanthropists of Mymensingh, Hirendranath Datta and Satish Chandra Mukherjee, Gurudas Banerjee and Shutosh Chaudhuri and A. Rasool, Benoy Kumar Sarkar and Taraknath Das, more lately Fazlul Huq and Bidhan Chandra Roy and Hiralal Roy — a galaxy of genius whose gentle glow survives in Triguna Sen and Hemchandra Guha. These men set up in the *Swadeshi* phase of India's freedom struggle, the Council of National Education that has grown into this University.

I remember, with a start, that these days in India as well as the world over, it is a tall order to wish happiness to anybody. Are we not having it dinned into our ears that revolution and socialism "fitting out our planet for happiness" (as Mayakovsky once put it) has come a cropper, connoting the death of hope for "the wretched of the earth" and the majority of mankind for the devil knows how long? I remember also Nietzsche's tremendous gibe, aimed at utilitarian thinking: "Who wants happiness? Only the Englishman does! "And it impels me to tell the young people in my audience to take to heart the grand old Sanskrit saying: *"Nalpe Sukhamasti; bhoomaiva Sukham"* ("There is no happiness in little things; only in plentitude can there be happiness"). That will not come either to the weak or to those who only flaunt slogans(*"Nayamatma Valaheenana labhyah; nayamatma pravachanena labhyah")).*

If the Hippocratic oath can be administered to those entering the ranks of healers of the physically sick, why not a few noble expostulations like *'satyam vada', 'dharmam chara', 'Satyanna pramaditavyam, dharmanna pramadivyam, Kushatanna pramadativyam'* on such occasions as the present? There is in it some hypocrisy involved. but, after all, hypocrisy is the homage that vice pays to virtue, Youth, in any case, is that segment of society whose role is — Pericles said 2500 years ago — that of the spring in relation to the year. They have an urge for "the good life" which, Bertrand Russell once said, "is inspired by love and guided by knowledge". No cynicism can mar this perception and whatever mordant wit might suggest, young people will never cease to dream dreams and see visions.

As one who is in the over-eighty age bracket and lives therefore on borrowed time, I have hardly the right, from today's youth, to anything but the order of the boot. I recall however, an Oxford meeting some sixty years ago, when George Bernard Shaw, berated by an undergraduate for the failure of Shavian prescriptions for the remedy of the then world's ailments, replied with a twinkle in his eye that if the old solved all problems the younger generation would be unemployed! The likes of us, have much to answer for. But the cross will have to be borne by those who are young, never forgetting — if you permit this slide into solemnity — that "Freedom's battle once begun/Bequeathed from bleeding sire to son/Tho' vanquish'd oft/Is ever won!"

If I am not mistaken, the special feature of Jadavpur has traditionally been a conscious stress on science and technology. I am old enough to remember the time when braving problems of privation, young scholars would study abroad, and then come back, not to cushy jobs but to further assignments of service to the people. Things are different now, and young people, born and brought up on the scarce resources of Mother India, are often lured away to affluent countries, the "brain drain" costing us hardly less then the earlier direct imperialist exploitation of our people. The current craze that drags some of our finest pupils abroad cannot be wished away, but it needs to be consciously resisted. Of course, learning knows no barriers and international intellectual intercourse is a must. But India cannot afford so much of her best talent to be spirited away when her own needs are so glaring. No doubt the defaults and degeneracies of our educational practices and the diseased socio-economic context of our life creates an atmosphere where promising graduates are driven to prefer migration in anticipation of better and freer facilities for intellectual work and for much higher financial rewards. Have we not already gifted to the United States at least two Nobel laureates in science and battalions of brilliant people who, in general, are too busy to think of the plight of the land of their birth and the pious obligation they owe to her? How can it be that, with exceptions no doubt, they seem to forget that our roots touch different soil, that 'pile-up-profit-or-perish' philosophy is self-defeating, that, Non-Resident Indian wealth adds up now to an estimated total of 300 billion dollars (about Rs.7,80,000 crores), that is, more than the sum generated by 98% of India's total population, while our frantic effort to attract some of that 'filthy lucre', even by laundering black money, remains a pitiful failure? All this at a time when, thanks to cunning, long calculated, counter-revolution in Eastern Europe, 'perestroika' professing once to smoothen the path of revolution, turns out to be a transition to the exit of communism (without even the lately fashionable 'golden handshake'!), and as a result, the world balance being upset, a country like India is driven to scurry for cover and live on the mercy of Big Money and sign on the dotted line new 'subsidiary alliances', with the World Bank, the IMF and what have you. And we cower before the 'chancelleries of the West' when, as the Delhi Asian Conference had resolved in 1947, this country was 'no longer to be petitioners'. Where else than in Jadavpur should one call for an end to this predicament before we go too far down.

Spinoza said long ago that when History brings "shocks", it is time "not to laugh, not to cry, but to understand". This is a tremendous task, not for us alone but for every people, disoriented during a decade and more of flight from first principles, of deideologization, presaged, in the seventies for example, by 'New Philosophers' in France, Michel le Bris languorously announcing in 1978: "God is dead, Marx is dead, and I am not feeling too well myself!" This superior, smirky intellectual *insouciance* can be dismissed as pitiful, but the peril was there. Defaming, denigrating, destablizing of what was called, 'real existing socialism' moved merrily, however, and its shadow fell everywhere. I remember here in 1952 Jawaharlal Nehru said that a political party without an ideology was little more than "a drinking den". Believe me, I mean no harm and I have no malice, but look at the picture of politics today. The Western Press is replete with reports about politics being a dirty word and politicians too often being not just "pompous asses but loathsome crooks". Perhaps, we are a little better off but I fear only a little better off. Quite often these days I have a feeling that we are not worth our salt. How the salt can again be savoured is a query I can only place, humbly and not too hopefully, before you.

Forgive me a personal reference as I recall criticism of the then Finance Minister T. T. Krishnamachari over the Mundra scandal when I had said in Parliament (1957) that we could "not trust the minister with the finances of our country and with the honour of our India". Today we have a Finance Minister who, for the sake of a Rajya Sabha seat affirms solemnly that he is a resident of Assam, who swallows his own formulation, as the chief spokesman of the South Group of countries, in regard to the need of a New International Economic Order, and urges acceptance of abrogation of sovereignty and of new "subsidiary alliances" with G-7 (Japan being in it as honorary white as she was an 'honorary Aryan' in Hitler's Anti-Comintern Axis). Our parliamentary opposition can do little more than asking to know the "terms and conditionalities" of World Bank-IMF benevolence, already well enough known in these days of electronic excitement when the quickest means of communication are no longer only three, namely, telegraph, telephone and tellawoman". My hope's sole prop is Marxism-Leninism and the Left movement, invincible in the long run because the heart of the people everywhere is on the left even as their pocket is on the right. But I am dismayed that while we have rallies and *bandhs* and *jail bharos* and what not, enormous mobilization of our people's strength recurs often in Calcutta's *maidan* and elsewhere, demonstrations apparently powerful enough to bring down many Bastilles, but they almost fizzle out in pettifoggeries and mounting miseries. I do not and cannot ask for the moon, but perhaps our people deserve a better scenario.

Meanwhile, the peril to our country grows and the West that has never forgiven India her freedom, enjoys and fuels failures of Indian statesmanship, whether in Punjab or Kashmir or elsewhere, with treason stalking unashamed, hoping that "if it doth prosper it may be no longer treason". With our neighbour countries we have not evolved amity yet. I remember our ambassador K.P.S. Menon's interview with Stalin in February 1953, when the latter remarked on the "crudity" of partition on the plea of "religion" and wondered if India contemplated a confederation to repair the damage. On top of everything, unashamedly communal-chauvinist forces are at this moment staging a *Yatra*, presumably for India's Unity('Ekta') but as a body-blow at not only the stability but the historically evolved entity of a multi-cultural India, a repeat performance of last year's *Ram Rath* that began as perhaps a pantomime but turned to be the sinister signal of sustained assault on the 'unity-in-diversity' which, however today's academic conceptualizers may scoff, has been the glory of our emerald country.

It will not be inaccurate to note that the present-day moral-political atrophy is a world phenomenon, emanating from what I repeat has been the sophisticated, surreptitious and to that extent more sinister counter-revolution which made Gorbachov a hero in the West ("Man of the Decade" and nobel laureate), then a prim little poddle petted first and then smacked hard enough to stop even its whines (as the Soviets collapse) and malevolent mavericks dangle before the people the uncertain goodies to be made aplenty by the market economy, through which repentant socialism gets reintegrated into 'civilized' life and waving the flag of 'non-confrontation' wait for the reign of 'universal human values'. Maybe, there is some honest naivet'e about it. No doubt, also deadly distempers had eaten into the body politic, even as hostile forces had never ceased many-pronged assault and friendly Third World movements fell short, the result being demoralization which only the oxygen of Marxist principle could cure. Thus, the once proud Soviets were found to beat their breasts, repudiating the legacy of Revolution (whose glory even betrayal cannot diminish or besmirch), pleading it was puny and feeble before a world that had come to know(and fear) its people as ten or at least eight feet tall ! A stunned world is told that what was known, on the most credible testimony—of Rabindranath Tagore and Romain Rolland, of Bernard Shaw and Sidney & Beatrice Webb, of Paul Robeson and Charlie Chaplin and Pablo Picasso and so many, many more of the world's summit — had been abracadabra, that here was History's most extraordinary 'Confidence Trick'. However faulty and frail the socialist countries in Eastern Europe, they also had great accomplishments to their credit, but the moral debacle in the Soviets was a godsend to the West—not accidental but long assiduously prepared—which had targetted that 'focus of evil' and brought about the dismantling of socialism. One must wait for a thorough study of the phenomenon but meanwhile suffer a 'counter-revolution' and its spreading venom. Even if history has been retarded by perhaps half a century, let me say with the great Afro-American W.E.B. du Bois: "The only possible death is to lose belief in the truth of socialism, simply because the great end comes slowly, because time is long."

Last year this Convocation was addressed by a distinguished chinese academician, and only the other day we had the welcome visit of China's Prime Minister Li Peng. It seems Li Peng was once asked if with Marxism-Leninism cornered and thwarted, China, adhering to her faith, felt "lonely" . He answered that with 1.1 billion people at home he had no call to be "lonely", and he had no doubts about socialism's future. Even Zbiegniew Brzezinski (how unpronounceable the name!) who lately rejoiced in "Thee Grand Failure: Rise and Fall of Communism in the 20th century" could not fail to note that the masses everywhere still respond to communism's call and much of the intelligentsia have sympathy for it—recognition this of the invincibility of this world-idea. Didn't Lenin once say that "Russia, India China etc." comprise the world's majority and will one day change life for people? If Russia defaults, there is no need for panic, since the spirit enkindled in Cuba and Vietnam and wherever "the wretched of the earth" are preparing to rise to freedom and fulfilment have heard the Marxist evangel and know they must "march breast forward/never doubting clouds would break/sure that we fall to rise/are baffled to fight better/sleep to wake". Brzezinski's native Poland, reconstructed but reeling, has, one learns, a Beer Drinkers' party with sixteen members in Parliament! Let that be, but what Marx described as "the filth, the shame, the inhumanity of capitalism" is writ large on the map of the world's experience. "Never forget the class struggle" is a Mao Tse-tung dictum to forget at our peril. Stalin's prognostication, rather thoughtlessly shunned, about the accentuation of class struggle with the advance of socialism, needs also to be assessed in view of the changing reality. I hope the relevant Faculties here and elsewhere, with some direct experience of how 'Marxology', 'Sovietology' etc. have worked in Western academic and ruling circles will help in unravelling a purposefully tangled scenario.

In the Third World which, though presently immobilized, must turn soon, we are, as Indira Gandhi said in her Prebisch Lecture in 1983, "the step-children of the Industrial Revolution" suffering attack, she added, from "surrogate colonialism". Our problems can never,

never be solved till socialism takes over. How apt it was when Fidel Castro, whose slogan "Socialism or Death' gives vent to a new elan told an international meeting that if a minute's silence is observed in memory of each of the millions of infants dying in any year on account of hunger and malnutrition, they would have to keep standing even when the 20th century ends and the 21st makes its entry ! How can making's future be safe in the hand of the dominating 'West' that, during Algeria's battle for freedom made for Jean Paul Sartre "an unexpected revelation, the strip-tease of European humanism"? For over five hundred years our kind of world has seen sickening repeats of this "strip-tease". It was the 'West' that dropped the atomic bomb on Japan, waged germ warfare in Korea, sprayed chemical death in Vietnam – the victims, let it be noted, non-white countries. There are numberless decent good souls in the Western countries, but in the vocabulary of power the 'West' has a certain connotation. It was this 'West' that highjacking the United Nations, moved recently to secure grip on the world's most strategic area, the Middle East, by teaching a lesson, not only to Saddam Husain's refractory Iraq but to all countries, when the latest instruments of super-technology and electronics were experimented with, spectacularly. We are "without the pale", out kind of country (Iran and Iraq were called "five letter countries" by the London 'Economist') and so during the United States' strike on Iraq, there was a tank 'war' in the desert where 2000 Iraqis surrendered before enormous American tanks with ploughs and bull-dozers in tow and as many as 6000 or more were just buried alive in their trenches! Maybe the 400 year-old bones of Hugo Grotius, father of international law in war and in peace, turned in the grave, but with so much of the dreary drip of democratic drivel all around, neither the world's politicians nor the press stirred to curse such enormity. With the world balance we could tilt from time to time now gone with the wind, our globe is perhaps now safe for the Heaven born exploiters and tormentors of humankind. Perhaps India's one-time occupation as the unofficial, if unacknowledged, conscience-keeper in world affairs is gone for ever.

It cannot be and it must not be, with India-China coming nearer each other, with the Middle East more aware that the 'West' is bent on following up British premier Lloyd George's wicked exhilaration in 1918 about World War I being, in that region, "the last and the most triumphant of the Crusades", with debt-trapped and virtually death-doomed country after country learning what is what, things will change and must – and the sooner the better. Can our country not play a role in this precarious but pregnant moment of history and will not our youth rise to the occasion? A moral-political upsurge is what the world needs and India must be ready.

In Marx's 'Capital', there is a passage that "when Money first appears it has a congenital stain on its cheek but when Capital emerges it drips with blood and dirt from every pore". Am almost exact anticipation is in *Shantiparva* in Mahabharata : "Big Money cannot be made unless you tear the heart of others, unless you are ready for vile deeds, unless you can kill like the fisherman kills his prey". Parallel to our ancient Indian stress on plain living and high thinking, Marx condemned consumerist excesses that are typical of our times – he condemned "inhuman, sophisticated, unnatural and imaginary appetites", for "private property does not know how to change cruder need into human need". The cult of avarice, of money as "the one unambigious criterion of success" promotes "inhuman" appetites, whether for drugs or for instant passports to bliss through *gurus* and God-men and what not, while Marx expounded "the *wealth* of human needs" under socialism, "a new manifestation of the forces of human nature and a new enrichment of human nature". If like David, we collect stones for our weapons from our own Indian brook, we find how near and kin to Marx is our land. When shall we cease to be derivative and secondary and imitative in the world scene (this is a lurid legacy of subjection to Britain), when shall we move mountains to go ahead?

In his comparatively mellowed response to "A Million Mutinies Now" (Heinemann 1990) in India, V.S. Naipaul, struck earlier by our kind of country to be "full of primitive people who tell virtuous lies", relents as he points out, less acidly : "the destructive chauvinism of the Shiv Sena, the tyranny of many kinds of religious fundamentalism (people always ready in India to let religion carry the burden of their pain), the film star corruption and racial politics of the South, the pious Marxist idleness and nullity of Bengal". The sting is in the tail, but it should not provoke us. Let us rather contemplate the best in our people to rejuvenate our faith, if that is our faith, that India's glory is not that she survives, almost, as E.M. Forster once wrote, as "some low but indestructible form of life". We are a people who have bidden defiance to Time (as Romain Rolland rejoiced) and are determined to hasten the world's great new age. Please forgive certain "words of learned length and thundering sound" that I might have imagined appropriate for Convocation address and given an old, somewhat weary but yet unbowed, servant of his people the assurance that our youth will not go astray and even if many shrink and sneer, they will keep the flag of freedom and fulfilment flying high over our India.

Myay rahoon ya na rahoon, iss chaman abad rahey.('No matter if I am here or not, may this garden continue to bloosom!').

CAMPUS NEWS

Refresher Course in Economics

Prof T.N. Mohan, Vice-Chancellor, Annamalai University, delivered the valedictory address at the recently concluded second 4-week Refresher Course in Economics conducted by the Academic Staff College of Pondicherry University. Prof A. Gnanam, Vice-Chancellor, Pondicherry University presided.

In his address Prof. Mohan observed that the refresher course would mark a turning point in the teaching career of the participants. He pointed out that though Prof Gnanam was a biologist he always evinced keen interest in economics also and interestingly cited the relation between economics and biology as brought out by the renowned economist Alfred Marshall. He added that there were many subjects which were not only difficult to learn but also difficult to teach and economics was one such subject. It is so because economics is a subject which is full of theories, abstractions, assumptions, presumptions & contradictions. Hence it was required of the economics teachers to make the teaching of economics interesting, he added. He gave many practical hints on how to make the teaching of economics interesting. The important among them were:(i) Always go to classroom with something new to the students which is also interesting; (ii)Do not depress the enthusiasm of the students; (iii) Start with something that is happening in the economy every day; (iv)Not only mention the names of famous economists but also tell their biographies; (v)Go to class well equipped in the subject concerned;(vi) Read the original books of renowned economists; (vii) Treat your student as companions not as urchins;(viii) Tell humorous anecdotes; and (ix) Develope a conviction: "I am going to teach economics in a different way".

Prof A. Gnanam in his thought provoking presidential address rightly pointed out that refresher courses like this would help the participants teachers to achieve academic advancement in their career. Courses like this, he said, offered an opportunity, created an atmosphere to interact about various economic issues. It should enable the participant teachers to be in a position to offer solution to economic problems. They only we could say that the refresher course had served its purpose. On the issue whether 'economics' is a utility subject or non-utility subject, Prof Gnanam emphatically pointed out that it depended very much upon economics teachers.

Dr. M. Ramadoss, Prof. & Head, Department of Economics, Pondicherry University and the Course Coordinator presented an overall report on the course. In this report he mentioned that the course which was inaugurated by His Excellency Dr. Har Swarup Singh, Lt. Governor of Pondicherry, consisted of 8-technical sessions covering the areas of Micro & Macro Economics, Developmental Economics, Health Economics and Fisheries Economics. He added that the objective of the course was to enrich the knowledge of the participants, to tell them something new – something that they did not know.

Rs. 400 cr. Project for Engg. Colleges

The Tamil Nadu Government is reported to have evolved a Rs.400 crore project for development of engineering colleges in the State with twin objective of creating a competitive edge and stopping brain drain to the extent possible.

Already a Rs.76 crore World Bank aided project has been launched in the State for effecting overall improvement in 21 Government and 34 aided polytechnics in Tamil Nadu. Besides improvement to buildings Rs.19.43 crores has been earmarked for provision of laboratory materials and equipment.

The project also envisages starting of new diploma and post-diploma courses with effect from 1992-93, granting autonomous status to institutions and providing multi-point entry system in chosen polytechnics, quality improvement of teachers both in higher education and training and establishment of a State Planning Centre for technical education in the Directorate. Recently the Education Minister, Mr. C.Aranganayagam,announced in the Assembly that the Canadian International Development Agency(CIDA) had agreed to fund a programme to train teachers working in polytechnics, under the quality improvement programme.

The project for engineering institutions provides for strengthening of infrastructural facilities, starting of new courses in thrust areas and introduction of a three year post B.Sc., B.Tech programme in all Government and Aided engineering institutions.

It has been proposed to introduce 10 new disciplines in B.E. degree course including Bio-Medical engineering , ceramic technology. petro-chemical engineering, food technology and polymer technology. Courses in instrumentation and control engineering, textile technology, industrial engineering and mining engineering are to be started in new institutions. A new stream of three year B.Tech course for science graduates has been proposed in the disciplines of aviation, chemical, electronics and communication and mechanical production technology, computer science and electrical and electronics. The other proposal is to introduce postgraduate courses in 24 disciplines including coastal engineering, garment technology,robotics and automation, tool design, separation science and technology, microwave and communication, fibre science and engineering, digital signals engineering and medical electronics and instrumentation.

Another major decision is to upgrade the four diploma level institutions in the State, namely Institute of Textile Technology, Institute of Leather Technology, Institute of Printing Technology and Institute of Chemical Technology so as to provide graduate courses in man-made fibre technology, textile processing, footwear technology, leather goods and garments, paper and pulp technology and sugar technology.

There will be substantial increase in the number of seats available in both undergraduate and postgraduate courses. The extra intake will be 2,200 in undergraduate courses and 795 in postgraduate courses. The upgradation of the diploma-based institutions will yield an additional 300 seats to the engineering course. Nearly 100 seats are proposed in the M.E. degree programme by research.

The proposals for improvement of quality in both teaching and administration are: Training of teachers to upgrade their skills, training of educational administrators, removal of deficiency in staff structure, establishment of curriculum development centre at the Directorate of Technical Education,establishment of students counselling cells in colleges, strengthening the Directorate of Technical Education and provision of modern communication systems.

Teaching Science in Hindi

Prof. C.S. Jha, Vice-Chancellor, Banaras Hindu University, has called for early formulation of a national policy for teaching science and technical subjects in Hindi. Speaking at the inaugural session of a two-day workshop on Use of Hindi in research, teaching and extension programmes in Technology held recently at the Institute of Technology of the varsity, Prof. Jha expressed distress that although everyone seemed to be shouting for promotion of Hindi as the national link language no one had so far pressed for a national policy for its use in teaching science or engineering subjects.

The Hindi translation of research findings came into the market after as long as 12 years and by that time several new developments took place in that particular field. This left the student or scientist with no option but to go in for books in English. English somehow also enjoyed a premier place in the job market despite India becoming independent over four decades ago, Prof Jha said.

He urged educationists to work for rapid standardisation of technical terms in Hindi and make them more comprehensible and easy to understand. "Do not use difficult words which require a dictionary, pick up commonly used terms in any language generally used by the people and you will develop a terminology readily acceptable and understood by the masses", he added.

Technical developments was the spinal cord of a nation's progress and this could be kept fighting fit only when the technical terminology was understandable to the common masses and not merely the few English-speaking persons, he said. To promote the culture of writing research papers in Hindi, Prof Jha suggested that their summaries be translated simultaneously into three or four regional languages and circulated. This would make these papers more popular besides enriching the vocabulary of the regional languages spoken by people in different States, he said.

Twenty-two research papers were presented at the workshop by experts from all over the country.

Mankekar Memorial Lecture

The Chairman of the Inter-University Consortium for Educational Communication, Prof. Yash Pal, has called for exposing the largest number of students, teachers and researchers of the country to the "original works " in the hope that at least a few of them would become pioneers in some field. Delivering the fourth D. R. Mankekar Memorial Lecture in New Delhi recently, he said there was a misconceived notion today that the country could be modernised and made competitive through free import of technology.

Prof Yash Pal said the technology which came in the form of blueprints and hardware machines had already been in use for a few years, and, in the fast changing world of today were on the point of being phased out when they were brought to this county.

"It is moonshine to assume that without doing enormous creative work and adding something on our own, we will be able to use such technology for competing with those who have supplied it to us," he pointed out.

Deploring the state of libraries in this country, Prof. Yash Pal said there were dozens of universities and scores of colleges which did not subscribe to even a single research journal. The subscription list even in the most prestigious universities was being reduced every year because of the increasing cost.

"As a result, a bulk of students grow up in an atmosphere where the feeling is that knowledge is static and frozen at the level when their textbooks were written some 30-40 years ago. They are not exposed to the criss-cross manner in which new thinking is done, new experiments are devised and occassionally discoveries made," Prof. Yash Pal added.

He called for removing deficiencies in the country's national laboratories and institutions through a new programme called 'INFLIBNET' which involves mutually connecting all institutions with any significant collection of books and journals or people.

He said INFLIBNET, which would save resources, could be started with a few universities and institutions with a lot of resources. Once the basic network is established, other universities or colleges could join in by putting up a Rs. 3-lakh terminal and getting a computer number.

Through the INFLIBNET it would be possible for new institutions to have a first rate library on its campus, quickly and at very small cost.

Environmental Research Fellowships

As a new funding programme, the Rockefeller Foundation, USA, awards Environmental Research Fellowships in International Agriculture to provide an opportunity to the established environmental scientists to join multi-disciplinary research teams at various International Agricultural Research Centres, such as IRRI, CYMMYT, CIATA, IITA, ICRISAT, CIP AND AVRDC.

Dr. M. Vikram Reddy of the Zoology Department of the Kakatiya University has been awarded Fellowship under this programme, to study soil fauna and soil management in Semi-Arid Tropical Agroecosystems in India. The fellowships is tenable for two years. He will be joining the International Crops Research Institute for Semi-Arid Tropics (ICRISAT) at Hyderabad as a visiting scientist and conduct research in collaboration with the scientists of the ICRISAT Drs. A. L. Cogle and K.K. Lee, on the responses of soil faunal communities, such as earthworms and soil arthropods including insects to various soil management practices in the Semi-Arid Tropical Agroecosystems of Telangana, the semi-arid region of Andhra Pradesh.

Training Programme in Abstracting & Indexing

An Intensive short-term training programme on Abstracting & Indexing is being organised by the Small Enterprises National Documentation Centre (SENDOC) located at National Institute of Small Industry Extension Training(NISIET) in Hyderabad from July 13-24, 1992. The objectives of the programme are (i) to cover principles of abstracting, indexing, searching and information technologies; (ii) to provide practice and impart skills to the participants in information processing as a means for creating databases; and (iii) to prepare participants for effective and efficient use of information technology to enable them to provide speedy access to information.

Persons working in special libraries; documentation and information centres; academic and research institutions in public and private sector, industrial developments/extension organisation in the government, private/corporate sectors are eligible to join the programme. The participants should be atleast graduates (preferably postgraduates) working in information centres, libraries, as listed above. The course is also useful to those individuals with formal library science education but without practical experience in abstracting/indexing/computer applications work.

Further details may be had from Mrs. . Subhashini, Course Director, NISIET, Yousufguda, Hyderabad-500045.

IGNOU Study Centres

The Indira Gandhi National

Open University (IGNOU) is reported to have recently established three new study centres in Punjab and Haryana. These are located at Batala and Patiala(Punjab) and Karnal (Haryana).

According to Dr. S N Suri, Regional Director for Haryana, Punjab and Chandigarh, IGNOU. was operating on a national level. This had been made possible through a network of 16 regional centers and 201 study centres.

The regional centres are the resource centres in the region, the study centres are the grassroot units of the university in the area, providing learning support to the students.

With this the number of study centres in Punjab and Haryana has increased to three and eight respectively.

Nagarjuna Varsity Proposes New Courses

The Nagarjuna University proposes to introduce four new courses. These are MA(Philosophy), M.A.(Social Work), M.Sc. (Aquaculture) and M.Sc.(Environmental Studies). This was revealed by Prof Y.M. Simhadri, Vice-Chancellor while presiding over a meeting of the academic senate.

Forum for Academic Values

To check the steady decline in academic values and respect for the teaching profession, senior faculty members of Delhi University have formed a 'National Forum for Academic Values'. The former principal of the Shaym Lal College Mr. R. M. Kohli, is the convener of the forum.

The main objectives of the forum are to provide a platform to identify the weakness in the system by means of seminars, workshops and lectures and to hold contact programme with eminent academicians to generate awakening among them.

PG Diploma in Journalism

The Dept. of Communication & Journalism of the Dr. Harisingh Gour University, Sagar, proposes to start a two-year postgraduate diploma course(functional Hindi) in Journalism. The UGC has sanctioned the necessary grants in this regard. The UGC had also approved in principle the Department's proposal to start the Master's Programme.

Sadhbhavana Essay Competition

In pursuance of the recent announcement made by the Union Minister of Human Resource Development , the Department of Youth Affairs and Sports will be holding Sadhbhavana Essay Competition for Youth in all official languages listed in the Constitution of India for students of Colleges/Universities/Technical Institutions and School students. The Competition will be held at three levels i.e. for College/University/Technical Institution level, High and Higher Secondary School level and Middle School level. The best Essay in each language will be given cash prize of Rs. 40,000/-, Rs. 35,000/- and Rs.25,000/- respectively and also monthly scholarship of Rs.400/-, Rs.350/- and Rs.250/- respectively for a period of five years. Each winner will also be awarded a National Certificate of Recognition.

The competition will be held in various educational institutions from 9-17th May, 1992. Essay will be written either in the official language of the State concerned or in Hindi. One best entry in each category/language will be sent to the District Collector by 25th of May, 1992. The District Collector will send one best entry from the District in each level in the official language of the State and in Hindi to the Director General, Nehru Yuva Kendra Sangathan, Jawaharlal Nehru Stadium, New Delhi 110003 latest by 20th June, 1992. The awards will be announced by 31st July, 1992 and will be given away on Sadhbhavana Diwas i.e. 20th August, 1992.

News from Agricultural Universities

Gender Sensitisation Programme

The Gender Sensitisation Programme of Department of Sericulture, Government of Tamil Nadu, was recently inaugurated at Tamil Nadu Agricultural University (TNAU) by Shri R. C. Panda, IAS, Special Secretary to the Government, Department of Education, Tamil Nadu and former Director of Sericulture. Speaking on gender concerns in National Sericulture Project (Macro level), Shri Panda called upon the participants to thoroughly understand the perception of women, their problems and their access to resources in sericulture so as to develop appropriate programme for them. He said that gender sensitisation should be taken up with an open mind and the extension personnel needed to be motivated to understand the needs of women and suggest technology package to them. Sericulture was occupying a prominent place in rural development in the country and women participation was of high order in sericulture, he observed.

Delivering the keynote address, Dr S.Jayaraj, Vice-Chancellor, TNAU, stressed the crucial role of women in sericulture and in all agricultural operations and said that Silk and Milk go together. He also added that women first initiated cultivation of crops, the art and science of farming and started gathering seeds. "Even in the period of drought, it is she who is able to sustain through various agricultural related enterprises", he underlined.

Referring to the research projects conducted by Centre for Agriculture and Rural Development Studies, TNAU on rural women, the Vice-Chancellor outlined the multiple roles of rural women in sowing, transplanting, weeding, storage of grains, harvesting, etc. and their magnitude of contribution. Appreciating the knowledge level of farm women in various farm operations viz: manures and manuring, irrigation and transplanting, he added that the farm women were well aware about agricultural programmes disseminated through mass media. "In decision making about farm operations, women play crucial role", he added.

Dr. Jayaraj called upon the scientists to develop technologies suited to the needs of rural women that would minimise drudgery, simple to understand and operate in their farm and home by appropriately blending traditional and modern technologies. For ensuring greater adoption of new technologies generated by rural women, "Women Participant Demonstrations" were necessary. Through electronic media, he added, the skill of the operations of mulberry cultivation of silkworm rearing could be demonstrated frequently for greater understanding and adoption. He also called upon the participants to survey the knowledge base of women in sericulture in detail.

The Vice-Chancellor suggested that structured and regular interaction of sericulture extension officials and scientists would help to formulate need based research and development programme in sericulture in particular had to be imparted as a subject in school curriculum. A "mini agriculture farm" should be developed in every school for imparting new farm technology to the villages through school children.

PAU Regional Kisan Mela

Mr. N.K. Arora, Commissioner, Jalandhar division, recently inaugurated a one-day Kisan Mela at Gurdaspur organized by Regional Research Station of Punjab Agricultural University. Speaking on the occasion Mr. Arora said that the strong ties of cooperation among the scientists of the university and the farmers of the State had led to green revolution. He lauded the role of PAU in research and extension activities.

Dr. Khem Singh Gill, Vice-Chancellor of the University, who presided, said that like the University Campus at Ludhiana, all the extension facilities had been provided at Gurdaspur also. Dr. Gill disclosed that a micro-nutrient soil testing laboratory had been established at Gurdaspur. He said that this year the University had released two new high yielding varieties of rice namely PR 110 and Basmati 385. Dr. Gill appealed to the farmers to purchase the farm literature published by the Communication Centre of PAU and follow the recommendations of the experts.

Dr. A. S. Khera, Director(Research) of the University revealed that 'Kesri' — a new variety of Maize had been released by the PAU this year. Dr. G.S. Gill, Director of Extension Education said that '*Changi Kheti*' an agricultural monthly of the University had maximum circulation among all the Punjabi magazines of the State. He informed that the correspondence courses in various fields had also been developed. He requested the farmers to purchase 'Package of Practices' bulletin for coming Kharif season. He cautioned the farmers against the non-judicious use of insecticides and pesticides.

Sustainability in Agriculture

The Board of Trustees and Scientists of International Maize and Wheat Improvement Centre (CIMMYT), Mexico, recently visited Punjab University and held detailed discussion on Sustainability in Agriculture with PAU scientists.

Dr. Peter Rodney Day (England), Chairman, Programme Committee and leader of the team expressed great concern over the yield of wheat and maize and their sustainability. He asked the PAU scientists to come forward with their problems and programmes, so that CIMMYT might reorient its research according to their needs. Dr. Khem Singh Gill, Vice-Chancellor of PAU and himself a trustee of CIMMYT, explained in detail the research programmes of the University. He apprised the visitors of the future needs of agriculture in Punjab.

In the meeting, the water problem was also discussed at length as also concern expressed over maintaining of soil health.

The members of the team also visited Remote Sensing Centre, Soil Laboratories, Cereal Quality Laboratory, Museum of Social History of Punjab etc. They lauded the high level extensive research being undertaken by PAU.

News from Abroad

Quality in Higher Education

The Fourth International Conference on Assessing Quality in Higher Education will be held on July 28-30, 1992 at the University of Twenty, Enschede, The Netherlands.

The purposes of this conference are to (1) promote awareness of current issues and perspectives on the assessment of quality in higher education world-wide, and (2) provide presentations by the leading exponents of a variety of perspectives in a limited-enrollment environment designed to promote cross-cultural discussion and interaction.

The topics proposed to be discussed at the conference include :

(i) International Aspects of Quality in Europe;

(ii) Use of Indicator Systems to Effect Change;

(iii) Total Quality Management in Higher and Further Education;

(iv) National Assessment of Institutions;

(v) National Assessment of Students;

(vi) Peer Review;

(vii) Assessment of Student Learning; and

(viii) The Politics of Assessment.

Further details can be had from : Trudy W. Banta, Director, Center for Assessment Research and Development, The University of Tennessee, Knoxville, 1819 Andy Holt Avenue, Knoxville, Tennessee 37996-4350 USA, or Chris de Winter Hebron, Academic and Training Director, H + E Associates Ltd, 12a Church Street, Stiffkey, Near Wells-next- Sea, Norfolk NR23 IQJ, England.

Indira Gandhi National Open University

Schedule of Telecast for the period 1 May to 31 May, 1992
6.30 am to 7.00 am

Date/Day	Academic Prog.	Title of the Course
1.5.92 Friday	Management	HRD-Employee Welfare
4.5.92 Monday	Bachelor's Degree Pgm.(BDP)	Upanyas Pt. I
6.5.92 Wednesday	Distance Edn. DE	Perfect Grading
8.5.92 Friday	Management	HRD-Business Environment
11.5.92 Monday	Bachelor's Degree Pgm.(BDP)	The Story of a River
13.5.92 Wednesday	Application Oriented Course in Nutrition for the Community(ANC)	Planning Balanced Diets
15.5.92 Friday	Management	Consumer Behaviour
18.5.92 Monday	Bachelor's Degree Pgm.(BDP)	Ek Nadi Ki Kahani
20.5.92 Wednesday	Application Oriented Course in Nutrition for the Community(ANC)	Santulit Aahar Niyojan
22.5.92 Friday	Management	Memorandum of Understanding Towards Greater Autonomy and Understanding Pt.I
25.592 Monday	Bachelor's Degree Pgm.(BDP)	Infectious Diseases
27.5.92 Wednesday	Bachelor's in Lib. & Infor. Sc.	Dewey Decimal Classification Pt VIII
29.5.92 Friday	Management	Memorandum of Understanding Towards Greater Autonomy and Understanding Pt.II

BOOK REVIEW

Knowing Instructional Technologies

Asha Arora*

G. Subramania Pillai. Instructional Designing : Information on Instructional Technology. Madurai, Nirmal, 1991. Pp.159 Rs.75.00

Our classrooms seem to be unaware of and unaffected by the vast developments that have taken place in electronic, information and communication technologies and their use in education. Lack of knowledge about the latest technologies available and the steps involved in implementing them may be one of the reasons for their non-implementation. Fear of high costs involved also is a restraining factor. But all technologies do not involve high costs, pleads the author. At times, low cost technologies work more efficiently, compared to their counterpart. It is upto the user who should select the appropriate technology keeping in mind its suitability for the purpose it is required.

Instructional technology implies the application of psychological, sociological and scientific principles and knowledge to instruction for achieving the specific objectives in learning, involving an understanding of the learner characteristics and behaviour, the structure of the content of learning, the application of appropriate principles of both behavioural and physical sciences. It should lead, argues the author, to (i) decreasing the time needed to achieve particular objective; (ii) augmenting the capacity of individual teachers; (iii) effecting economies in financial cost; and (iv) making the process effective with reference to the attainment of educational objective. It would thus involve a systematic scientific approach to a problem together with the application of appropriate scientific research; a rational problem solving approach to education; a way of thinking systematically about learning and teaching. To raise the quality of both teaching and learning making it comparable with the international standards, the author advocates pre-service and in-service programmes for teachers.

The author talks in great detail about systems analysis and systems design and goes on into significance of systems approach to education. The principles of systems engineering, systems analysis and operation research are normally applied in other man-made systems. Certain elements of these principles can easily be adopted in instructional process, advocates the book, which will transform the student input into a desired output with modified behaviour through the instructional process.

Education is an open system, according to the author, and instructional design is concerned with the application of modern skills and techniques. It may be possible through (i) Training Technology, (ii) Cybernetic Psychology, and (iii) System Analysis. Training technology emphasises task analysis and design of interrelated training components; Cybernetics focusses on dynamic feedback and self-regulation; while system analysis focusses on development of management systems.

The book discusses instructional design theories starting from Comenius and Herbert to Cronbach, and reiterates that in a systematic view of instructional design, the objectives, content and instructional strategies are not only inseparable but also complementary components. Designing instructional strategies is a major concern of educational technology and in developing appropriate instructional design a system analyst needs to be aware of the problems that are normally faced in the instructional process and, before adopting a teaching strategy, he will have to think about the strategy to develop curriculum and strategy to implement the same.

The book is an honest attempt to interest the teaching community to adopt principles of system analysis in instructional process, thereby planning a suitable instructional design for themselves. However he fails to sustain the flow of argument as he often loses track while developing deep into an aspect of the topic while trying to illustrate a point, like devoting about 20 pages to Systems Analysis, in effort to show usefulness of Systems Analysis, to education. Also, a little more attention to the layout of the book and proof reading would have added to its worth. However, author's wish is justified that the book may be of help to those who are interested in knowing various aspects of currently available technologies for instructional purposes.

**Research Cell, Association of Indian Universities, New Delhi.*

SCHOOL OF CORRESPONDENCE COURSES
ANDHRA UNIVERSITY, WALTAIR

ENTRANCE EXAMINATION NOTIFICATION – JUNE, 1992

ENTRANCE EXAMINATION UNDER MODIFIED SCHEME FOR LIBERALISED ADMISSION

B.A./B.COM. COURSES WITHOUT ANY FORMAL ACADEMIC QUALIFICATION

Applications are invited from the candidates residing in India for Entrance Examination for admission into 1st year B.A./B.Com.,Degree courses for the academic year 1992-93 through the School of Correspondence Courses.

No minimum qualification is required to appear for Entrance Examination, except that CANDIDATES SHOULD HAVE COMPLETED 20 YEARS OF AGE by 1-7-1992. Candidates who pass the Entrance Examination are eligible for admission into 1st year B.A./B.Com. Courses in the School of Correspondence Courses only.

Applications will be issued from 25th April, 1992. Duly filled-in applications should reach this office on or before **11.5.92.** Applications received after the due date of 11.5.1992 will be accepted on payment of the penal fee at the following rates:

Upto 16-5-1992 (for first five days)... Rs.10/-

Upto 21-5-1992 (between Sixth and tenth day).. Rs.50/-

Applications received after 21.5.1992 will not be accepted even with maximum penal fee.

Date of B.A. and B.Com. Entrance Examination is 21.6.1992

Under Modified Scheme of Entrance Examination, there will be four papers of one hour duration each and the examination will be conducted in two sessions on SUNDAY, the 21st June, 1992 from 9.00 a.m. to 11.00 a.m. and from 2.00 p.m. to 4.00p.m. Examination will be conducted in one centre in each district in Andhra Pradesh besides the existing centres in jurisdiction of Andhra and Nagarjuna Universities.

Intending candidates may write to the undersigned by DESIGNATION for application form, syllabus and model question papers sending Rs.20/-by Demand Draft, drawn in favour of the Director, School of Correspondence Courses, Andhra University,Waltair, along with one self-addressed envelope of 9"x6" size (without affixing postal stamps).

The candidates may also remit cash at the Cash Counter in the School of Correspondence Courses towards application form. POSTAL ORDERS AND CHEQUES WILL NOT BE ACCEPTED.

The prescribed application forms, syllabus and model question papers are also available at the following two places at New Delhi and also at our 23 study Centres on payment of Rs.20/- through Demand Draft drawn in favour of the Director, School of Correspondence Courses, Andhra University, WALTAIR- 530 003.

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Proposed Date of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/ Officer to be Contacted
June 6-7, 1992	Fifth Annual Conference of All India Association for Educational Research	Theme : Quality Improvement in Educational Research	Department of Education, Shivaji University, Kolhapur	Dr. R.B. Dewasthalee, Head, Department of Education, Shivaji University, Kolhapur-416004
August 11-16, 1992	8th World Congress for Rural Sociology	Theme : Rural Society in the Changing World Order	International Rural Sociology Association, USA	The Pennsylvania State University, 306, Agricultural Administration Buliding, University Park, Pennsylvania - 16802
August 16-19, 1992	55th Annual Meeting of the Rural Sociological Society	Theme : Rurality and the Global Environment	Rural Sociological Society, USA	-do-
August 25-28, 1992	Second Afro-Asian Psychological Congress	Theme : Psychology for Social Development and Human Welfare	The Chinese Psychological Society	Prof. Wang Su, Congress Secretariat, Department of Psychology, Peking University, Beijing-100871
August 26-28, 1992	Second International ISKO Conference on Cognitive Paradigms in Knowledge Organisation	To provide a forum for scholars working in the field of knowledge organisation	Madras Library Association in collaboration with Sarada Ranganathan Endowment for Library Science and University of Madras	Mr. S. N. Kumar Conference Secretariat, 5, Sivaganga Road, Madras-600 034
September 21-23, 1992	Sixth Annual Conference of the Asian Association of Open Universities	Theme : The Role of Open Universities in promoting Education for All	Korean Society for the Study of Distance Education	Dr. In Sung Jung, Secretariat, AAOU 1992 Annual Conference C/O Korea Air and Correspondence University 169, Dongsung-Dong, Chongro-Ku, Seoul 110-791, Korea
October 26-31, 1992	Third IAU Mid-Term Conference to be held at Alexandria, Egypt	Theme:Adaptation of University Management Structures and Strategies for New Requirement	International Association of Universities (IAU), France	Dr Franz Eberhard, Secretary General, International Association of Universities, 1, rue Miollis, 75732 Paris Cedex 15 France
November 9-13, 1992	16th World Conference on Distance Education for the Twenty-First Century	To give a view of the aspects of development in Distance Education in the Twenty-First Century	International Council for Distance Education, in cooperation with Sukhothai Thammathirat Open University (STOU), Thailand	Mr. Bruce Scriven, Program Chair – 16th World Conference of ICDE, Queensland University of Technology, Locked Bag No. 2, Red Hill Queensland 4059, Australia

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1. Abbas Aivani. **Mill on liberty: A philosophical study.** Bangalore. Dr Srinivasa Rao, Prof, Department of Philosophy, Bangalore University, Bangalore.

2. Mahna, Shelly. **Sri Aurobindo's concept of human unity and its relevance to modern times.** Durgawati. Dr J P Shukla, Prof and Head, Department of Philosphy, Rani Durgawati Vishwavidyalaya, Jabalpur.

3. Mutsuddi, Sujata. **Some problems concerning the nature of belief and knowledge.** Calcutta.

4. Sahni, Ajai. **Democracy, dissent and the right to information.** Delhi.

5. Santosh Kumari. **Philosophical concepts in Krishna cult.** Durgawati.

Language & Literature

English

1. Babu, C K. **American literary response to the challenge of institutionalism: A study of the selected novels of Joseph Heller, Ken Kesey and John Updike.** Bharathidasan. Dr V Ayothi, Department of English, Bharathidasan University, Tiruchi.

2. Badiger, Veeresh Rachappa. **Paul Scott's idea and practice of the novel.** Karnatak. Dr C R Yaravintelimath, Prof and Chairman, Department of English, Karnatak University, Dharwad.

3. Dave, Pratibha. **Poetry of Walt Whitman in search for mystical identity.** Vikram. Dr S R Julka.

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Address Enquiries to :

Deputy Secretary (Publications)
Association of Indian Universities
AIU House, 16 Kotla Marg, New Delhi - 110 002
Telephones : 3310059, 3312429, 3313390, 3312305
Telex : 31-66180 AIU IN GRAM : ASINDU

CLASSIFIED ADVERTISEMENTS

ANDHRA PRADESH AGRICULTURAL UNIVERSITY

ADMN. OFFICE : RAJENDRANAGAR : HYD-500030

Advertisement No.2/C/92, Dated : 8-4-1992

Applications in the prescribed form together with a Registration Fee of Rs. 10/- are invited for the undermentioned posts of Assistant Professor cadre in the time scale of Rs. 2200-4000 (UGC) in A.P. Agricultural University, Rajendranagar so as to reach the Registrar, Administrative Office, A.P. Agricultural University, Rajendranagar, Hyderabad-500030 on or before May 11, 1992.

FACULTY OF AGRICULTURE			**No. of Posts**
1.	Agronomy	..	20
2.	Genetics & Plant Breeding	..	9
3.	Soil Science & Ag. Chemistry	..	6
4.	Horticulture	..	16
5.	Plant Pathology	..	7
6.	Plant Physiology	..	3
7.	Entomology	..	7
8.	Agril. Engineering	..	7
9.	Agril. Extension	..	6
10.	Agril. Economics	..	5
11.	Microbiology & Bio-energy	..	2
12.	Bio-chemistry	..	2
		Total	90

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Application forms together with full details regarding qualifications prescribed for the posts and other particulars can be had from the University on payment of Rs.10/- in person or through a Crossed Demand Draft drawn from any Nationalised Bank in favour of Comptroller, A.P. Agricultural University, Rajendranagar, Hyderabad-500030 payable at State Bank of Hyderabad, Rajendranagar Branch. NO MONEY ORDER/POSTAL ORDER will be entertained. For obtaining it by post, a self-addressed and stamped envelope of Rs. 5/- size 35 cm. x 15 cm. should be enclosed to the requisition letter. The cover containing the requisition for application form should be superscribed "Requisition for Application" and addressed to the Registrar, Administrative Office, A.P. Agricultural University, Rajendranagar, Hyderabad-500030.

Prof. S.M. Siddiqui
REGISTRAR

ASSUMPTION COLLEGE

Changanassery- 686 101
(Kerala)

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1) Lecturer in Zoology - 1 (Ladies only) Leave Vacancy (Community quota)

The post is subject to sanction by Mahatma Gandhi University, Kottayam, and review under the U.G.C. Scheme.

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Age and qualification based on the Govt. Service and University regulations — Must be able to read and write Malayalam.

Apply within one month from the date of this notification. Application can be had from the undersigned on payment of Rs.60/- for lecturer and Rs. 20/- for last grade.

PRINCIPAL

UNIVERSITY OF MADRAS

Applications are invited by the Registrar, University of Madras, Chepauk, Madras -600 005 upto 29-5-1992 for One post of Librarian and one post of Deputy Librarian, Main University Library, Chepauk, Madras - 600 005

The qualifications for the post of Librarian and Deputy Librarian are as follows:-

i) Master's Degree in Library Science/Information Science/ Documentation with atleast fifty-five percent marks or its equivalent grade and a consistently good academic record;

ii) One year specialisation in an area of information technology/Archives and Manuscript keeping OR Master's degree in an area of thrust in the institution; and

iii) Evidence of innovative library service and organisation of published work and professsonal commitment.

iv)(a) **Experience for Librarian:** Atleast 10 years' as a Deputy Librarian in a University Library or 15 years experience as an Assistant University Librarian/College Librarian.

(b) **Experience for Deputy Librarian :** 6 years' experience as an Assistant University Librarian/College Librarian.

v) **Desirable for both the posts:** M.Phil/Ph.D. degree in Library Science/Information Science/ Documentation/Archives and Manuscript keeping.

A Doctorate in any subject will be given due weightage when every-thing is equal.

Scale of Pay:

Librarian: Rs.4500-150-5700-200-7300

Deputy Librarian: Rs. 3700-125-4950-150-5700

(plus allowances admissible to the scale).

Candidates who fulfil the above requirements may obtain on or before 25.5.92 the specimen copy of application form and other details from the Registrar, University of Madras, Chepauk, Madras - 600 005 on requisition together with a self-addressed stamped envelope (size 30 cm x 12 cm to the value of Rs. 2.50)on payment of Rs.10/- towards Registration fee by Demand Draft except those belonging to Scheduled Caste and Scheduled Tribe candidates. The candidates should remit the registration fee only by means of a Demand Draft drawn in favour of the Registrar, University of Madras.

Dr. P. Govindarajulu
REGISTRAR

No.F.7-1/92-Misc.(Aca.)

NATIONAL INSTITUTE OF EDUCATIONAL PLANNING AND ADMINISTRATION

17-B, Sri Aurobindo Marg
New Delhi - 110 016

PROJECT ON:

(i) DEVELOPMENT OF COLLEGES IN 100 EDUCATIONALLY UNDERPRIVILEGED DISTRICTS

(ii) PROFILE OF SELECTED UNIVERSITIES IN INDIA

1. PROJECT FELLOW (2 posts) (Consolidated salary ranging between Rs.4700/- to Rs.5000/- p.m. inclusive of House Rent Compensation of Rs.800/- p.m. to be regulated as per rules)

   Qualifications: Essential: Should have consistently good academic record with first or high second class (B+) Master's Degree in Economics, Social Sciences, Commerce, Education OR equivalent degree of a foreign university. Either a doctorate degree of an Indian or foreign University OR published research work of a high standard OR outstanding academic contribution in the relevant area of the project.

   At least five years' teaching/conducting and/or guiding research OR equivalent administrative/professional experience in relevant areas. Proven merit in writing/editing/documenting professional work.

   Desirable: Research experience in the area of Economics of Higher Education.

   Age: 45 years – Relaxable in case of retired officers of the Government/Autonomous organisations who could be considered on re-employment basis as per Government of India instructions.

2. PROJECT ASSOCIATE FELLOW (2 posts) (Consolidated salary ranging between Rs.2800/-p.m. to Rs.3100/-p.m. inclusive of House Rent Compensation of Rs.450/-p.m. to be regulated as per rules)

   Qualifications: Essential: Should have consistently good academic record with first or high second class Master's Degree in Economics, Social Sciences, Commerce, Education OR equivalent degree of a foreign university. Either a doctorate degree of an Indian or foreign University OR published research work of a high standard OR outstanding academic contribution in the relevant area of the project.

   Desirable: 3 years' experience of data collection, processing and analysis. Research experience in the area of Economics of Higher Education.

   Age: 35 years

3. PROJECT ASSISTANTS (2 posts) (Consolidated salary ranging between Rs.2200/- to Rs.2500/-p.m. inclusive of House Rent Compensation of Rs.450/- p.m. to be regulated as per rules)

   Qualifications: Essential: Minimum second class Master's degree in Economics, Social Sciences, Education OR equivalent degree of a foreign university.

   Desirable: Research experience in the area of Economics of Education.

   Age: 30 years

   NOTE: For Project Fellow age and qualifications are relaxable in cases of retired officers of the Government/Autonomous Organisations who could be considered on re-employment basis as per Government of India instructions.

   Period of appointment of the above posts will be 10 months to One years.

Applications on plain papers addressed to the Acting Registrar, National Institute of Educational Planning and Administration, 17-B, Sri Aurobindo Marg, New Delhi-110016 may be sent latest by **8th May, 1992.**

NORTH EASTERN HILL UNIVERSITY

LOWER LACHUMIERE, SHILLONG

ADVERTISEMENT

Applications on plain paper giving details of educational qualifications (supported by copies of certificates), justification for seeking placement and names of two referees, are invited for two posts of Junior Research Fellow (Rs.1800/- + HRA) and one post of Technical Assistant (Rs.1600/- + HRA), from persons desirous of working in a research project on molecular biology, genetics and ecology of Frankia, sponsored by the Indo-French Centre for the Promotion of Advanced Research/Centre Franco-Indien pour la Promotion de la Recherche Avancee, for a period of three years. The Project shall involve travelling for collection of germplasm and laboratory experiments involving modern techniques of molecular biology. Requisite Qualifications : 1. JRF – First Class postgraduate degree in Botany/Life Science etc. with valid NET/GATE qualification. 2. TA - At least high second class postgraduate degree in Botany/Life Science etc. For both the positions preference shall be given to candidates with specialized training/experience in microbial genetics/ecology/biochemistry/physiology. Applications must reach Dr. A. K. Misra, Principal Investigator, Department of Botany, NEHU, Shillong-793 014, within fifteen days of this advertisement.

INDIAN STATISTICAL INSTITUTE

ADMISSION NOTICE

ASSOCIATESHIP IN DOCUMENTATION AND INFORMATION SCIENCE AT BANGALORE

1992-94

Applications are invited for admission to the course leading to the Associateship in Documentation and Information Science. The duration of the course is 24 months.

ELIGIBILITY: (i) A postgraduate Bachelor's Degree in Library Science(B.Lib.Sc/B.L.I.S) or (ii) A second class Master's Degree in any subject and at least two years' library/documentation/information handling experience or (iii) A four-year plus degree, such as B.E. and M.B.B.S. and at least two years' library documentation/information handling experience.

Applicants may be required to appear in a selection test and interview. No tuition fees are charged. A stipend of Rs. 600/- per month may be granted to a student on merit. Deputationist from an organisation will not receive any stipend. For application form and prospectus apply to Professor and Head, DRTC, 8th Mile, Mysore Road, R.V. College P.O., Bangalore 560 059 with a crossed Demand Draft for Rs.10/- drawn in favour of "Indian Statistical Institute, Bangalore". No.M.O. or I.P.O. or cheque is acceptable.

Last date for receipt of filled-in applications: **30 June 1992**

UNIVERSITY OF ROORKEE

Admission to Postgraduate Programmes 1992-93

1. **Master's Degree Programmes (M.E./M.Tech./ M.Arch./ M.U.R.P.) of $1\frac{1}{2}$ Years (3 Semesters) Duration**
   - (a) **Department of Architecture and Planning**

     *Architecture *Urban and Rural Planning *Building Science & Technology(offered by C.E.Department)
   - (b) **Department of Chemical Engineering**

     *Advanced Transfer Process * Computer Aided Process Plant Design *Industrial Pollution Abatement
   - (c) **Department of Civil Egineering**

     *Building Science and Technology * Computer Aided Design * Environmental Engg. *Geotechnical Engg. *Hydraulic Engg. *Remote Sensing & Photogrammetric Engg. *Structural Engg. *Transpotation Engg.
   - (d) **Department of Earthquake Engineering**

     *Soil Dynamics *Structural Dynamics
   - (e) **Department of Electrical Engineering**

     *Measurement and Instrumentation *Power Apparatus and Electric Drives *Power System Engieering *System Engineering and Operations Research
   - (f) **Department of Electronics & Computer Engg.**

     *Communication System *Control and Guidance *Microwave & Radar *Solid State Electronics *¤ Computer Science and Technology *T.V. Technology(extension programme of PG Diploma)
   - (g) **Department of Mechanical and Industrial Engineering**

     *Machine Design Engg. *Production and Industrial System Engg. *Thermal Engg. *Welding Engg.
   - (h) **Department of Metallurgical Engineering**

     *Extractive Metallurgy *Industrial Metallurgy Physical Metallurgy
   - (i) **I.P.T.,Saharanpur**

     *Pulp and Paper

ELIGIBILITY FOR ADMISSION

*Bachelor's degree in the appropriate field of Engineering/Technology/Architecture. Alternate qualifications exist. Details are available in Information Bulletin.

¤ M. Sc. (Physics or Mathematics)

2. **Postgraduate Diploma Pogrammes of 1year (2 Semestes) Duration**
   - (a) **Department of EarthquakeEngineering**

     *Earthquake Engg. *Earthquake Technology

     (only for sponsored candidates)
   - (b) **Department of Electronics and Computer Engineering**

     *Television Technology
   - (c) **Department of Humanities and Social Sciences**

     *δ Industrial Management

ELIGIBILITY FOR ADMISSION

*Bachelor's degree in Engineering or Master's degree in Science in appropriate disciplines

δAlternatively Master's degree in Economics/

*Psychology/Commerce with Mathematics at Bachelor's degree level.

3. **M.Phil. Programmes of 1 year (2 Semesters)Duration**
   - (a) **Department of Chemistry**

     *Industrial Methods of Chemical Analysis
   - (b) **Department of Mathematics**

     *Computer Applications *Mathematics
   - (c) **Department of Physics**

     *Instrumentation *Material Science

ELIGIBILITY FOR ADMISSION

*Master's degree in Science in appropriate disciplines/B.E.

4. **M.Tech. Programme of 3 Years(6 Semesters) Duration**

   Department of Earth Sciences

   ¤Applied Geology ¤Applied Geophysics

ELIGIBILITY FOR ADMISSION

¤Bachelor's degree in Science in approprite discipline

5. **M.Sc. Programmes of 2 years(4 Semesters)Duration**

   ¤Applied Geology ¤Applied Mathematics ¤Biosciences ¤Biotechnology ¤Chemistry ¤Physics

ELIGIBILITY FOR ADMISSION

¤Bachelor's degree (Three years course) in Science in appropriate disciplines

*Sposnored by Department of Biotechnology Government of India

6. **Univesity Diploma of 2 years(4 Semesters) Duration**

   ¤Pulp and Paper ¤Process Instrumentation

ELIGIBILITY FOR ADMISSION

¤Bachelor's Degree (Three Years Course) in Science with Physics, Chemistry and Mathematics.

Information Bulletin containing Application form can be obtained from the office of Assistant Registrar (Academic), University of Roorkee, Roorkee-247667 on payment of Rs.50.00(Rupees fifty only) by university receipt/Bank Draft payale to Registrar, University of Roorkee, Roorkee in person or by sending a self- addressed 22x30 cms envelope with postage stamps of Rs.2.00 affixed to it. Separate application form should be filled for courses belonging to differnt departments. Candidates who have appeared in the final examination of qualifying degree are also eligible to apply for admission.They will be considered provisionally for admission provided they submit a certificate of having completed all examination requirements of the final qualifying examination. 20% seats are reserved for SC/ST candidates.

Last date for receipt of complete Application Form in concerned Departments is: **June 15, 1992.**

R.B. Saxena
REGISTRAR

Roorkee
April 2, 1992

SCHOOL OF CORRESPONDENCE COURSES

ANDHRA UNIVERSITY - VISAKHAPATNAM 530 003

ADMISSION INTO B.A.,B.COM. AND B.Sc.COURSES, SUPPLEMENTARY BATCH 1991-92

The School of Correspondence Courses invites applications from the candidates residing in India for admission into B.A., B.Com.,and B.Sc.Degree Courses for the academic year 1991-92 as Supplementary Batch.

The 1st Year University Examinations for these candidates will be held in September/October 1991 and 2nd and 3rd Year Examinations will be held with a gap of one year each, thereafter.

	COURSES	ELIGIBILITY
1.	B.A.(Both English and Telugu media) with the combinations of Spl. Telugu, Spl. English, History,Economics, Politics,Sociology, Public Administration and Mathematics:	Intermediate/P.U.C. or equivalent or pass in Entrance Examination conducted by this School.
2.	B.Com(both English and Telugu media)	Intermediate P.U.C. or pass in Entrance Examination conducted by this School
3.	B.Sc. (English Medium only)	Intermediate/P.U.C. or equivalent with Physical Sciences and Mathematics.

Applications will be issued from 20th April, 1992. Filled in applications should reach the undersigned on or before **11th May 1992.**

Intending candidates may write to the undersigned by Designation for Application form and Prospectus by sending Rs.20/- by Demand Draft/Money Order in favour of the Director, School of Correspondence Courses, Andhra University, Waltair-530 003. The candidates have to write their names, address and course for which they want the prospectus on the back of the D.D. or M.O. coupon whichever is applicable. The candidates may also remit cash at the **CASH COUNTER** of the School of Correspondence Courses, towards Application form and Prospectus. Postal Orders and Cheques will not be accepted.

The prescribed application forms are also available at the following places on payment of Rs.20/- through Demand Draft drawn in favour of the Director, School of Correspondence Courses,Andhra University, Waltair-530 003.

OTHER PLACES OF SALE OF APPLICATIONS:

A) At New Delhi

1) Sales Counter, Association of Indian Universities, A.I.U. House, 16 Kotla Marg 2) Sri Venkateswara College, Doula Khuan, New Delhi

B) 1) Government College, Srikakulam 2) M.R.College, Vizianagaram, 3) Mrs A.V.N. College, Visakhapatnam. 4) Government College Rajahmundry, 5) P.R.Government College, Kakinada, 6) Sir C.R.Reddy College, Eluru, 7)S.R.R.& C.V.R. College, Vijayawada, 8) A.C. College, Guntur, 9) D.N.R. College, Bhimavaram.10)A.B.M. College, Ongole, 11) Silver Jubilee College, Kurnool, 12) Indian Institute of Management and Commerce, Hyderabad 13)A.M.A.L.College, Anakapalli, 14)R.S.R.K.R.R. College, Bobbili, 15)Noble College,Machilipatnam, 16)V.S.R. & N.V.R. College, Tenali, 17) Government Degree College, Narasannapeta, 18)S.G.S. College, Jaggaiahpeta, 19)S.S.& N.College, Narasaraopeta, 20)S.K.B.R. College, Amalapurm, 21)V.S.R. & N.V.R. College, Chirala, 22) V.V. & M. College, Ongole and 23) Sri Sarvodaya College, Nellore.

The School has no agents and takes no responsibility for prospectus issued and promises made for admission by any other institution.

WALTAIR
Dt. 11.4.92

Prof V. Abraham
DIRECTOR

N.B.: The applicants should clearly mention in their requisition that they require "Admission form for Supplementary batch 1991- 92."

Special Note for Successful candidates in B.A./B.Com.: Candidates who passed in the B.A./B.Com. Entrance Examinations held in January, 1992 need not apply for the admission application form and prospectus for admission into 1st Year Degree Course. The School will arrange to send the admission application form and prospectus along with marks statement-cum-eligibility certificate to such candidates. They have to pay an amount of Rs.20/- towards the cost of admission application form and prospectus along with the prescribed tuition fee at the time of admission. However, the duly filled admission application form along with the necessary enclosures including Demand Drafts/M.O. receipt towards prescribed fee should reach the School of Correspondence Courses on or before the prescribed last date.

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13 … 1992
C.F.T.R.I. MYSORE

ISSN-0566-2257

University News

MONDAY, MAY 4, 1992

Rs. 5.00

Mangalore Varsity Convocation

From L to R : Shri M. Veerappa Moily, State Education Minister & Pro-Chancellor, Shri Khursheed Alam Khan, Governor of Karnataka & Chancellor, Shri Pranab Mukherjee, Deputy Chairman, Planning Commission, who delivered the convocation address, Prof. M. I. Savadatti, Vice-Chancellor and Prof. K.M. Kaveriappa, Registrar of the University.

NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING

Admission Announcement : 1992-93

Diploma Course in Educational and Vocational Guidance

Applications are invited for admission to a Diploma Course in Educational and Vocational Guidance offered by the NCERT for the Session 1992-93. The Course will commence on **3rd August, 1992.**

Admission to the course is on all India basis. Admission test and interview will be held on 10th June, 1992 at Allahabad, Bangalore, Bhubaneswar and New Delhi. Candidates may take the Admission Test in English or Hindi. Exact venue of the test and interview will be intimated to the candidates by post. No TA/DA will be paid for appearing in the admission test.

DURATION OF THE COURSE : 9 Months. **SEATS :** 35.

SCOPE : Candidates after passing this course will be eligible for recruitment to the post of Guidance Counsellor in the schools, State Bureaux of Guidance and Child Guidance Clinics.

ELIGIBILITY : Master's degree in Psychology or Education with at least 55% marks. Relaxation of 5% marks for SC/ST candidates is allowed.

AGE : Preferably below 40 years as on date of admission.

SCHOLARSHIP : Scholarship of the value of Rs.500/- per month will be awarded on merit to the first 25 candidates admitted to the Course. All candidates admitted against the SC/ST quota will be eligible for the award of scholarship. Deputed candidates interested in the award of scholarship will have to qualify in the All India Selection Test.

RESERVATIONS : 15% seats are reserved for Scheduled Castes and $7^{1}/_{2}$% seats for Schedule Tribes.

HOW TO APPLY : Applications on plain paper mentioning the following details along with attested copies of mark sheets, and SC/ST certificate, wherever applicable, should reach at the address given below latest by **8th May, 1992.**

1. Name (in block letters)
2. Sex
3. Address
4. Date of birth
5. Educational qualifications (in a tabular form) mentioning the examinations passed, name of the University, percentage of marks, year of passing, papers/subjects offered.
6. Experience, if any.
7. Proposed centre for taking the Admission test.

NOTE :

1. Preference will be given to candidates sponsored by the State education department subject to an undertaking by the employee that after passing the course, candidate's services will be utilized in the area of guidance at least for a period of three years.
2. Those in service should send their application through proper channel.
3. Applications incomplete in any respect will not be considered.
4. Medium of instruction for the Course is both English and Hindi.
5. Limited hostel facilities are available.

Head
Department of Educational
Psychology , Counselling and
Guidance, NCERT,
Sri Aurobindo Marg,
New Delhi -110016.

davp 780(3)92

UNIVERSITY NEWS

VOL. XXX MAY 4
No. 18 1992
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Editor :
SUTINDER SINGH

Sports and Feminity

G.S. Sivia*

Of late, many organised attempts are being made to uplift the social status of women. UNESCO has designated 1992 as the women's year and global level celebrations focus on promoting her position and welfare in different aspects of life. Sports is a newly emerging area of investigation particularly in the context of women's involvement in this pursuit. Her story in sports is in no way different from her story in society. Many a woeful tale are on record of this downtrodden human species. It is in the range of memory that in the deep historical past, she was used as a media of barter economy and her worth was considered in exchange of commodities. In Sports her social position has been equally degrading.

The ancient civilizations, often portrayed as an embodiment of lofty ideals, exhibited rather uncivilized behaviour towards her. The ancient Greek society is conceptualised as a symbol of beauty, perfection and harmony. Even in the Platonic scheme of things which considered Gymnastics equal to grammar, women's place was pathetic. Not to speak of permitting her participation, along with men, she was not even allowed to witness the Olympic competitions. There is a story of a widow, Pherenice of Rhodes, who was tempted by an over anxiety of witnessing the bout of her son, a boxer of repute. She entered the stadium, disguised as a male. Overwhelmed by the joy of her son's victory, she could not contain herself and leaped into the arena to embrace him. Her robes fell away. She was the only exception to having been shown mercy by the judges keeping in view her family record in sports. She was the widow of an Olympic champion and mother of a boxer of equal calibre. Violation of this taboo entailed death penalty by flinging the offender from the nearest cliff. The illustration raises a side issue whether the ancient Greek model was really classical in the sense it is understood that it was governed by humanistic ethos and conscience and whether in Hellas those who participated in sports were really next to God. De novo value free research might reveal startling facts different from the general notions held about that society.

In 18th century sprouted the seeds to emancipate women from the social bondage. An Anglo-Irish woman, Mary Wollstonecraft, for example, published "A Vindication of the Rights of Women" in 1792. The publication challenged the centuries old ideas that women existed only to please men. 19th century industrial revolution, famous for scientific inventions and generating new horizons of thinking, added momentum to the concern and set in a chain of new trends in traditional beliefs, attitudes and lifestyles. Slogans began to sound that women should receive the same treatment as men in education,work opportunities, politics and that the same moral standards should apply to both the genders. Production of new domestic appliances created immense leisure time for the women folk and industrialisation created more job opportunities. This backdrop gave a great impetus to bring the female sex out of the four domestic walls. She began to work in factories, business houses and governmental agencies. The spectrum of her social interaction widened up. This environment gave rise to yet another new environment. Demand for women sufferage originated in countries like Britain and USA, even though the first country to grant the

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**Joint Secretary, Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi - 110 002.*

right to vote was New Zealand (1883). These movements to liberate women sowed the seeds to open sports vistas for her. She began to appear in the Olympic competitions revived by Baron Pierre de Coubertin in 1896.

Old habits die hard. No doubt there was a perceptible change but discriminatory treatment to her in sports continued. The following data speaks for disproportionate representation of the fair gender in relation to the male gender in the Olympics (till 1980) even though their world population is roughly fifty-fifty.

		Competitors	
		Men	*Women*
i)	Athens-1896	311	0
ii)	Paris-1900	1319	11
iii)	St.Louis-1904	681	6
iv)	Athens-1906	877	7
v)	London-1908	1999	36
vi)	Stockholm-1912	2490	57
vii)	Antwerp-1920	2543	64
viii)	Paris-1924	2956	136
ix)	Amsterdam-1928	2724	290
x)	Los Angeles-1932	1281	127
xi)	Berlin-1936	3736	328
xii)	London-1948	3714	385
xiii)	Helsinki -1952	4407	518
xiv)	Melbourne -1956	2958	384
xv)	Rome -1960	4738	610
xvi)	Tokyo -1964	4457	683
xvii)	Mexico -1968	4750	781
xviii)	Munich -1972	5848	1299
xix)	Montreal -1976	4834	1251
xx)	Moscow -1980	4265	1088

The sociological and psychological dimensions continue to haunt the problem. Many a social pressure still exert adverse influences. Cultural factors rather than biological factors predominantly determine her status in society. The status of women in sports is deeply rooted in her overall social position. Her emergence in sports is contingent upon her emancipation from the traditional social roles assigned to her such as housekeeping, child bearing and kitchen jobs. She is still suffering from economic disparity. The average pay of women workers even in the most industrialised societies like USA is only 59% of that of men. They are poorly represented in administration, civic bodies, bureaucracy, industrial concerns and management systems including those relating to sports. Unless she gets social justice in all these spheres, she is enviromentally handicapped to play her expected role in sports. It is quite interesting that the US Federal Constitution had to be amended (1972) to pass Title IX to provide for equality of opportunity to her in the educational programmes of which sports today is an important component. So much so, the National Collegiate Athletic Association (NCAA) challenged this legislation and lost the litigation despite an appeal against the judgment of the lower court. This is her place in sports even in the modern Western cultures that are boastfully eulogised for bringing about social equality to women.

Unlike the archaic Roman Law which granted husband the right over the life of wife, women enjoyed a place of honour in Hindu Mythology. No religious function was considered complete without her active participation in the ceremonies. In Mahabharata period, Shakuntala and Kunti were said to be spending their leisure in ball game known as *'Kandukreeda'*. Development of women sports has been engaging the attention of the Govt. of India since Independence. A couple of schemes like All India Women Sports Festival, special incentives to women in the scheme of sports scholarships, fixation of women's quota in the training institutes and the sports hostels have been introduced. However, developing countries like India are yet far behind. Even in the industrially advanced countries, female athlete is only an emerging phenomena of the twentieth century. The female Olympic programme since the second Olympics (1900) which included only Tennis and Golf for women, has been steadily expanding. Many separate women sports organisations have sprung up at the national level. In India, in games like Hockey and Cricket, there are separate women federations. Even though, there are happy visible signs of emancipation of women in sports emerging from the much spoken reality of universal trends advocating social equality for women, yet traditional expected female roles to be passive, gentle, delicate and submissive continue to hinder the process. The general notion that females in sports grow as 'tomboys' which is incompatible with feminity and its delicacy are still ruling the roost. Society has yet to go a long way to eradicate indiscriminatory treatment to women in sports. As and when her social equality becomes a reality the sports equality will follow automatically.

Legal Education for Professional Responsibilities and Democratic Development

Reflections from the Indian Experience

N.R. Madhava Menon*

India became a democratic republic in 1949. For enabling a nation in disorder following two centuries of colonial government and a series of painful operations involving partition based on religion, it was necessary to evolve a legal system capable of balancing competing interests, protecting basic human rights and promoting socio-economic development on acceptable lines. The tradition of Common Law, the principles of constitutional government and the institutions of a liberal democracy which India inherited from Britain did assist the country to achieve the transformation smoothly, though slowly.

The ideas, aspirations and experiences which the Freedom Movement instilled in the Indian mind found expression in the Constitution which was finally adopted on 26 November, 1949. A clear break from the past with equally clear vision of the future came as a challenge and an opportunity to people and their leaders. How did the legal profession including legal education respond to the challenge? What are the major legal developments during the last four decades? What new challenges in law and governance have emerged and what is the legal agenda for the immediate future? This paper attempts to reflect on some of these questions from the perspective of an academic lawyer involved at present in an innovative programme of integrated legal education for professional excellence and democratic development.

Legal Profession and Legal Education at the time of Independence

Though the modern Indian legal profession is not patterned on the lines of the English Bar, its evolution is shaped by English traditions and influences. With the organization of the English court system by the British Indian administration in the late eighteenth century, there was a felt need for lawyers knowledgeable in the Common Law. In the beginning, British barristers who came to India either as servants of the Crown or otherwise found themselves in great demand both by the rulers and by the affluent sections of Indian society. They were assisted by the native *vakils* and pleaders in the Presidency towns. Eventually the *vakils* and pleaders gathered the professional skills to such a degree as to be able to compete with barristers even at the level of the High Courts. However, they were not usually people who have had University education either in law or in other liberal disciplines. In fact, till the end of nineteenth century, there was not any systematic instruction in law available in any of the few universities mainly located in the Presidency towns of Calcutta, Bombay and Madras. It was through special short-term courses offered by the Presidency High Courts themselves that basic legal training to prospective pleaders and *vakils* was imparted in early period. Thus, legal education in the professional sense was practically non-existent till the beginning of the present century.

The story of the evolution of legal education in the first half of this century is reflected in the Fourteenth Report of the Law Commission of India (*Setalvad Commission, 1958*) which stated that "the main purpose of University legal education seems hitherto to have been not the teaching of law as a science or as a branch of learning, but merely imparting to students a knowledge of certain principles and provisions of law to enable them to enter the legal profession..... part-time institutions have been regarded as sufficient for this purpose. Those institutions seemed to have suited both the teacher and the taught. Most of the students who attended the morning and evening classes conducted by those institutions were in employment somewhere or prosecuted some other postgraduate study while the teachers in law were generally practising lawyers who had to attend to their professional business during office hours".

The Setalvad Commission recorded in its report several defects in the system of legal education obtaining in India at the time of Independence. Some of its observations which are summarised below are as valid today as at the time when the report was submitted :

1. Our system of legal education is defective because it fails to organize the study of law as a branch of learning and as a science. This partly accounts for the absence of juristic thought and publication in our country.

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2. "Nor is the education in law imparted at the Universities such as to fit the law graduates for the profession notwithstanding its supposed bias in favour of a professional career ..... It is true that our country has produced eminent practitioners in law and learned judges..... Their achievements probably arise from their own intellectual brilliance and capacity rather than to the education received by them at the Universities."

3. There is steady deterioration in standards because of a number of factors including the part-time nature of legal education, over-crowding, lack of motivation for a legal career and lack of earnestness in teaching. "Many colleges", the Commission observed, "have no buildings or libraries of their own. Most of the students who crowd these institutions are young men who have not been able to secure employment; they take a course in law while waiting for a job with no intention of practising law as a profession..... It is to these crowded classes that the part-time teacher imparts his instruction, and the attendance he commands is only due to the anxiety of the pupil to have his attendance marked when the lecturer calls the roll. It is not surprising that in this *chaotic state of affairs in a number of these institutions (which are characterised as a profit-making industry) there is hardly a pretence at teaching* (emphasis added) .... This character followed by law examinations held by the Universities, many of which are mere tests of memory and poor ones at that — which the students manage to pass by cramming short summaries published by enterprising publishers".

4. The disturbing result of this chaotic system of legal education was "a plethora of LL.Bs, half-baked lawyers, who do not know even the elements of law and who are let loose upon society as drones and parasites in different parts of the country. Several of them did not know what subjects were prescribed either in the first or second LL.B.; did not know the names of the books prescribed."

The Law Commission concluded its assessment of the state of legal education in the country in 1958 in the following words :

> "It is unfortunate that we should have to present so dismal a picture of the character of the legal education imparted in the majority of institutions in our country..... The portals of our law teaching institutions — manned by part-time teachers — open even wider and accessible to any graduate of mediocre ability and indifferent merit."

The Bar Council attempts in reforming Legal Education

Thirty five years later when we look at the state of legal education, it seems to have changed for the worse in some respects warranting more radical steps to arrest the continuing deterioration. Of course, there has been a tremendous expansion in the number of colleges imparting the so-called legal education. In 1955-56 there were seven law departments and 36 law colleges under 25 universities in the country with 20, 159 LL.B. students on their rolls (*Fourteenth Report of Law Commission, p. 555*). Thirty five years later in 1991-92 the statistics show an impressive growth with nearly 50 law departments and over 350 colleges enrolling over 2,50,000 students. Unfortunately, this growth in numbers has not been based on any rational planning or on availability of even the minimum resources needed for professional legal education. During this period, there has been no proper control either from the Bar Council of India which had its own internal problems or from the universities some of which discovered in law colleges a source of income to finance their other activities. Vested interests in the "educational business" and a section of the private bar exploited the prevailing laxity and the increasing demand for law degrees and started law colleges without buildings or libraries, without full-time teachers or facilities for professional training, without even the formal sanction of the Bar Council or the University concerned. A situation was soon created, as the Law Commission observed, where law colleges became subsidiaries of arts colleges and law examinations were thrown open to students who have rarely attended any formal course of teaching in a college.

While the Bar Council of India succeeded in bringing about some discipline on certain academic aspects, it failed miserably on the organizational and professional aspects. Thus a three-year programme of legal education after graduation was accepted throughout the country by 1967 and a uniform curriculum comprising fourteen compulsory subjects and a minimum of two optional subjects came to be adopted by all the universities imparting legal education. The practice of doing law course along with other postgraduate courses was also discontinued. A certain minimum percentage of attendance at lectures given every year was accepted as a pre-requisite for admission to law examination though proxies and other malpractices are said to be widely prevalent in a number of law colleges. The minimum

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eligibility for admission to law course was fixed at graduation with 40 percent marks (reportedly relaxed recently) and a system of practical training was recommended as part of university education in law. These are indeed substantial achievements in the academic content of legal education particularly in comparison to the deplorable condition which existed before. But very soon some greedy college managements and a class of professionally unsuccessful advocates organised themselves to defeat every one of these achievements by disregarding the wholesome provisions of the Bar Council Rules on Legal Education. The control mechanism through inspection of law colleges provided for in the Rules was ineffective and was practically in disuse for over two decades. When the procedure was finally invoked, the Bar Council found to its dismay that its writ can be only against the university and not against individual law colleges violating the norms. Apart from penalising even good colleges, the process of derecognising degrees of a university for the faults of a few colleges affiliated to it is a long drawn-out and practically ineffective step to maintain standards. No wonder that the Bar Council of India could not get a single college disaffiliated so far despite the fact that it sought disaffiliation against several colleges operating without the minimum requirements prescribed.

Bar Council lectures and examinations on procedural subjects followed by compulsory apprenticeship for a year under a senior lawyer were pre-requisites for every law graduate for enrolment as an advocate prior to 1961. But in 1969 the Government of India succumbed to pressure from a section of agitating students and over-ruled the Bar Council, dispensing with this wholesome requirement. Every person with a law degree, however obtained, could thereafter claim enrolment and practice as an advocate even at the Supreme Court. To make things still worse, by another amendment of the Advocates Act in 1979, the Government enabled full-time teachers also to practice also, making law-teaching a part-time affair even for full-time teachers!

What ails Legal Education ?

In the course of a nation-wide survey organized by the Bar Council of India Trust through teams of senior law teachers in every state in India during 1980-82, several disturbing facts were revealed which proved the ineffectiveness of the Bar Council to maintain standards of legal education. Some of the problems thus identified are as follows :

Firstly, most law colleges are overcrowded with students and very few of them have even the minimal resources to give meaningful education. Most of the students are not motivated by a desire to take a law career but are there to avoid unemployment or that they could find nothing better to do. With such an overwhelming number of frustrated students many of whom are rejected from other branches of higher education, the task of legal education is all the more difficult even in good institutions.

Secondly, it was noticed that a substantially large number of law teachers (over 60%) are practising lawyers many of whom devote very little time and attention to their teaching assignments. Teaching law as a science and as a tool for democratic development is alien to the equipment and orientation of most of these part-time teachers. The assumption that every advocate can be a law teacher as well proved disastrous to the quality of legal education. When they are also poorly paid by college managements, nothing better can be expected.

The next major problem of legal education today is that of medium of instruction in legal education. With the change-over to regional languages as medium in undergraduate education and the discontinuance of teaching English as a compulsory subject in colleges in some States, a situation has emerged in which law colleges started getting students without even a working knowledge of English. The understanding of the regional language on the part of students and teachers in law colleges at the same time is totally inadequate to conduct meaningful education in all the law subjects. The materials of law study – statutes and judicial decisions – are mostly in English and there are not enough standard textbooks in the different regional languages or in Hindi. The result is a total failure in the development of communication skills on the law student which are crucial to advocacy. The Bar Council of India attempted to tackle this situation by holding that ordinarily the medium of legal education shall be English and wherever it is not, the law graduate should acquire a working knowledge of English upto graduate standard in order to qualify for enrolment as an advocate. It is understood that the Bar Council of India has under pressure from some sections of the Bar have relaxed this requirement also. Being a multi-lingual society with a tradition of neglect of native languages the situation is likely to get aggravated leading to a major problem based on language in the near future.

For a long time the curriculum did not adequately reflect the changing role of law in the democratic development of Indian society. Nor did legal education impart the skills and orientation appropriate to equip law persons for the tasks of social engineering the Indian Constitution demanded of them. The pattern of legal education worked to limit innovation and mute responsiveness on the part of law persons. An experienced and objective foreign observer of the Indian legal scene observed recently :

> "Since India gained her Independence in 1947, there have been major advances in dismantling the colonial features of the legal system and making it an instrument of a democratic polity. A constitutional regime with guaranteed fundamental rights, an independent judiciary fully separate from the executive, and judicial review of governmental action have transformed India's public law into a law of free citizens rather than colonial subjects. But in many areas of private law, Indian legal institutions still reflect their colonial origins .... Courts and lawyers are caught in deeply entrenched patterns, crystallised in the course of two centuries of colonial rule, that have proved formidably resistant to reform ..... (*Professor Marc Galanter's Affidavit in the Bhopal Gas Leak case in the U.S. Court*)

Bar Council and the Scheme of Integrated Legal Education

Writing in the Journal of the Bar Council of India, the then Chairman of the Council wrote in 1982 :

> "A major change introduced on the legal education front by the Bar Council is the five-year integrated course .... After detailed consultation with the Universities and State Bar Councils a well-thought out scheme for professional education is brought into force from June 1982.... The Bar Council of India is committed to the successful implementation of this scheme... Hopefully the image and quality of legal education will be different and we will have a more meaningful and professionally significant educational scheme in operation throughout the country by the turn of the present decade."

These are strong words of determination and purpose coming from the apex body charged with the responsibility of regulating standards of legal education in the country. Naturally, universities imparting legal education took the 'command' seriously and, one after the other, tried to reorganize their programmes to fulfil the prescriptions of the Bar Council. Some decided to go in for liberal education in law (as distinct from professional education) over which the Bar Council has no authority while others planned to be selective in keeping the number and distribution of professional law colleges affiliated to them. Within two years, over one-third of universities imparting legal education switched over to the new pattern which promised better facilities, more teachers and increased academic seriousness on the content and method of professional legal education. An impression went round that this time the Bar Council is serious in getting its decisions implemented by the universities and is tightening controls on the increasing number of 'teaching shops' exploiting the degree-craving young men and women of the country.

Later events proved the impression wrong. For reasons best known to the Bar Council, the pre-1982 position was quickly restored and the reform steps were steadily retraced. Universities and even individual colleges were asked to decide for themselves whether they want to continue with whatever they have been doing before or switch over to the new scheme. Members of the Bar Council particularly those who are running some of the so-called law colleges in their respective States with hardly any facilities and making huge profits, publicly denounced their own decision and dubbed the new scheme as anti-poor, elitist and impracticable ! By some queer interpretation of authority, universities which switched over to the new scheme and which refused to allow colleges under them to continue the old scheme, were asked by the Bar Council of India to frame regulations for the old pattern (three-year LL.B.) also and allow colleges to do what they wanted to run. The Council went a step ahead and seemed to have framed part of the university regulations themselves when it declared that "persons who have completed two or three years of study under the five-year scheme may join the first year of the three-year LL.B. Scheme.

Be that as it may. Both the status-quoists and the reformists have reasons to be upset by the casual manner in which legal education reforms are being handled by the Bar Council of India. Universities and colleges are totally confused at what the Bar Council of India wants them to do and some reportedly started simply ignoring the Council's directions knowing fully well from past experience that the Council itself is not serious on what it decides on legal education. The ultimate result is that legal education in the country is fast slipping into square one which the Law Commission of India in its Fourteenth Report characterised in the following terms :

> *"It is not surprising that in this chaotic state of affairs in a number of these institutions there is hardly a pretence at teaching... This character is followed by law examinations held by the Universities, many of which are mere tests of memory and poor ones at that, which the students manage to pass by cramming short summaries published by enterprising publishers .... The result is a plethora of LL.B., half-baked lawyers, who do not know even the elements of law and who are let loose upon society as*

drones and parasites in different parts of the country". (emphasis added)

To blame the Bar Council alone for the decline in the standards of legal education is totally unjustified and unwarranted. The governments at the Centre and in the States have been following a step-motherly attitude towards legal education denying grants to law colleges and leaving responsibility by and large in private hands. Even the University Grants Commission's contribution to the funding and development of legal education has been negligible compared to other streams of higher education. Despite this neglect from the government, if legal education did expand during the last four decades, it is largely because of private effort supported by practising lawyers. It is too much to expect quality and standards in such circumstances particularly when the consumers are not bothered so long as the degree they get is acceptable to the profession. The private entrepreneurs also found the proposition attractive in economic terms because of the high demand and the relatively modest investment necessary. The economics and politics of legal education led to uncontrolled expansion with poor returns for the society and for the profession.

Being an elected body, the Bar Council necessarily reflected the pulls and pressures arising from ground realities. It was therefore left to the universities to make the best out of a bad bargain. Some of them particularly those funded by the Central Government and some other institutions did make some valiant efforts to save the situation from total collapse.

Saner elements in the Bar Council did not lose hope and embarked on a novel and challenging experiment in setting up a model institution for legal education "to act as a pace-setter and a model for academic and professional excellence". The project after a long period of incubation got finally established at Bangalore in the form of a fully autonomous University called the National Law School of India (NLSIU). No sooner was it established the very same elements who opposed the new pattern of legal education, came out strongly against the NLSIU as well. Some contended that it is none of the business of the Bar to sponsor a University whatever be its statutory obligation in respect of legal education. Others condemned it as yet another elitist, anti-poor exercise of the Bar Council and canvassed against any governmental support to the enterprise. One State Bar Council reportedly passed a resolution demanding the Bar Council of India to immediately dismantle the project and sent its representative to the BCI on this 'destructive mission'. However, these efforts did not succeed because of a variety of circumstances and NLSIU embarked on its academic programmes from July 1988. A dedicated team of teachers from all over the country and a band of highly motivated students selected through a national level admission test are now involved in the exciting adventure of structuring a scheme of legal education that will hopefully be a matter of pride for the profession as well as the country.

Emerging Trends and Perspectives

The trends in the legal education scene are too diffused and inarticulate to be able to project any precise direction or change. With the weakening of the Bar Council's controls and the reluctance of the Government to do anything in the matter, the situation is likely to drift for some more time. Meanwhile new law colleges are started on the basis of initiatives from local interest groups with near total disregard of established norms relating to infra-structural facilities. (It is reported that during 1990-91, in the city of Hyderabad alone over 15 law colleges were started by private bodies and interest groups). The five-year integrated LL.B. programme is increasingly unpopular with college managements because of the relatively larger investments necessary and those which earlier started the five-year course, have either discontinued it or are phasing it out. Instead, part-time teaching is becoming the dominant trend in legal education as was the practice before the 1982 reform package. The same education imparted in part-time colleges is also being imparted through correspondence courses by a number of universities though it does not entitle one to join the Bar according to existing rules of the Bar Council of India. It is possible that the law graduates who take their degrees through correspondence programme might influence the Bar Council to allow them also to enrol and the Council may agree to do so. This would certainly further liberalise access to the so-called legal education and in turn bring the correspondence course institutions to more stringent academic discipline. In the process, perhaps the commercially run "teaching shops" which have been ruling the roost all along with no responsibility to content or quality will go out of business. As and when it happens another opportunity for legal education reforms in the country may emerge.

One wholesome development little noticed by the law teaching community in the country is the scheme evolved by the Curriculum Development Committee of the University Grants Commission. Detailed syllabi oriented towards more social relevance and interdisciplinary education were drawn up in almost all subjects in the undergraduate and postgraduate courses in law by this Committee. Unfortunately there are very few takers so far to the innovative recommendations contained in this valuable report. With the revival of the Law Panel of the University Grants Commission and the impact of the series of Academic Staff College courses being held for law teachers it is bound to receive the attention it deserves and there is a distinct possibility of curricular reforms in legal education in the not too distant a future.

Another emerging trend which is bound to pick up in future is the interest in continuing legal education on the part of organized bar, the judiciary and the law persons in government and industry. Initiated by the Bar Council of India Trust in 1981 it is today part of the regular activities of many State Bar Councils and Bar Associations. The National Law School of India regularly offers continuing education courses for law teachers, lawyers, judges and administrators. There is talk on setting up a National Academy for Judges to undertake the education and training of judicial personnel at all levels. There is indeed demand from advocates themselves for such courses and they pay for the expenses involved. And when there is demand, the supply is bound to be stepped up.

Yet another very encouraging trend noticed in contemporary times is the use of legal processes by social activists thereby creating a need for para-legal and public legal education. Today, para-legal training and legal awareness programmes constitute a major component of the State-sponsored legal aid schemes. There is surplus of funding available for this activity though legal education centres have not come forward as yet to organize it in a big way. Perhaps, with the distance education techniques now becoming popular, public legal education may occupy a major agenda for universities and colleges in the future.

The problems which legal education, professional as well as otherwise, may have to face in the future may partly be of the same kind as before, namely, finances, quality, numbers and relevance. The new problems which may emerge are likely to come from the demands of a market economy, the impact of the technological and information revolutions under way, and the closer scrutiny of the profession necessitated by increasing public awareness and people's participation in the legislative-litigative processes. The question of language of the law will assume different dimensions which may result in further dilution in standards and ineffectiveness of control mechanisms. The trend towards globalisation in the social, economic and political spheres to which India is now consciously committed would possibly generate forces which may challenge the inertia in legal education and legal profession bringing a wave of changes the nature of which are difficult to predict in the present circumstances.

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DIRECTOR

COLLEGE EDUCATION IN ASSAM

S.P.Gupta*

It may be interesting to trace the growth of modern education in Assam in order to know the progress of higher education there. Assam came under the British rule in 1826. The pre-British rulers of the Brahamaputra Valley, the Ahoms, were not entirely unmindful of the cause of education but retrogression set in towards the close of the Ahom rule, when in the confusion of civil wars, and repeated invasions by the Burmese and the neighbouring hill tribes, education reached the lowest ebb. When the British took over, they wanted to educate and train the natives in the art of the new administration requiring written documents, files and intricate transaction in accounts. Towards the end of 1835, Gautahi School was started and a beginning was thus made in the 'Higher' or secondary education in Assam. When the portals of public service were opened only to the English-educated, the upper classes became generous patrons of educational institutions. As followers of filtration theory they believed that education should come down from the higher to the lower stratum in society. Of the unofficial enterprise, though inspired by a proselytising spirit, the contributions made by the Christian missionaries both to the promotion of education and language in Assam, the tribal areas in particular, was indeed unique.

By 1873 the number of Higher English schools in Assam increased to 6. They were affiliated to the Entrance standard of the Calcutta University. Though only a few students passed the Entrance examination, all those who passed were given scholarships to proceed for collegiate education in Calcutta. An attempt was made to introduce collegiate education at Gauhati itself in 1866 but it failed after a trial of several years owing to the low number of matriculates in Assam. The cost of education per pupil was five times that at the Presidency College, Calcutta, and two times that at the Patna College because of the fact that the average attendance at Gauhati was less than 5 students. Moreover, the University results were so disappointing, particularly for the period 1872-74 when the number of successful candidates was absolutely nil, that hardly any voice was raised in 1876 when the Govt. finally decided to abandon the collegiate education in the Gauhati School and so in the whole of Assam.

With the gradual increase in the number of successful candidates, a considerable number of students had to abandon the idea of higher education altogether. Despite the obvious need, the subject remained shelved and the Govt. also remained a silent spectator of the scene. In 1899, attention of the Govt of Assam was drawn by public men that the time was ripe for establishing a college at Gauhati. Manick Chandra Baruah made out a strong case thus :

> "Assam is the only province which has not got a College. Indeed, it has not a high institution worth the name. A College at Gauhati with a European Principal will be better appreciated by the students than similar private institutions in Calcutta (owned by native gentlemen) to which they generally resort."

The strongest support came from the Chief Commissioner Sir Henry John Stedman Cotton who in 1897 had favoured the idea of establishment of a Govt. hostel for Assamese students in Calcutta. But public opinion was mounting and representations poured in from all quarters. Immediately Cotton took energetic steps to lay the foundation of the College named after him, in 1901. The Public of Gauhati could not have done a more appropriate thing to perpetuate the memory of the foremost popular ruler of the province than by associating his name with the College at Gauhati. They resolved and the Chief Commissioner accepted their resolution to name the new College as "Cotton College". Later, Sir Henry Cotton was elected a member of the British Parliament. He came back to India as President of the Indian National Congress in 1904.

With the setting up of the Cotton College in 1901 with a mere forty students and a staff of four Assam had the nucleus of higher education. On the annulment of the Partition of Bengal, Assam was separated from Eastern Bengal and reconstituted into a separate Province in 1912, J.R. Cunningham, D.P.I. 1912-1930, initiated a scheme of educational development of the Province. As an outcome, the College was raised immediately to the Honours standard and two years later obtained postgraduate affiliation in English. Actually the first College in Assam was the M.C.College, Sylhet which is

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now in Bangladesh. It had been started in the year 1892, nine years earlier to Cotton College. It was raised to the first grade in 1916. It received a greater share of the attention of the Govt., than the Cotton College upto the year 1931. The high standard of results maintained by these two colleges elicited the praise of Asutosh Mookerjee who recognised the fact that in collegiate matters, Assam had been doing its best to maintain high standards.

The results of the M.A. in English had been miserable and it was not considered worthwhile to continue it at the Cotton College after 1933. Thereafter there was no facility for P.G. students in the whole of Assam and students had to go to Calcutta and Dacca for the purpose until the setting up of the Gauhati University in 1948. Anyway, upto the undergraduate level education had been spreading in Assam as the establishment of the following Colleges upto Independence show :-

1.Cotton College, Gauhati (1901), 2. Jagannath Baruah College, Jorhat (1930), 3. G.C.College, Cachar, Silchar (1935), 4. Handique Girls College, Gauhati (1939), 5. M.C. College, Barpeta (1939), 6. B.Barooah College, Kamrup (1943), 7. Nowgong College (1944), 8. Nalbari College (1945), 9. Darrang College, Tezpur (1945), 10. DHSK College, Dibugarh (1945), 11. Karimganj College, Cachar (1946), 12. B.N. College, Goalpara Dhubri (1946), 13. Sibsagar College (1947), and Assam Medical College, Dibrugarh (1947).

Gauhati University

The Gauhati University was established in 1948 with a fund of goodwill and support from the people of Assam as it then was in the country's North-East. Donations for the University from all sections of the people crossed over Rs.6.00 lakhs. The oft-repeated words in the Statement of Objects and Reasons appended to the Gauhati University Bill of 1947 would bear repetition: 'Assam offers great opportunities of study in many fields – linguistic, historical, ethnological, archaeological, geological, scientific and agricultural'.

It will be the aim of the proposed University to intensify the study of the age-long spirit of Assamese life and character, and to bring in them the necessary adjustments in relation to Indian civilisation, and to the different and new impulses of the West.

It was constituted as a teaching, residential and affiliating university. The Gauhati University represented the urges and aspirations of the people of Assam in the field of higher education. It evolved as the alma mater of all the universities in the region in course of time.

With the coming into being of the Dibrugarh University, Assam Agriculture University, North Eastern Hill University, and Universities at Manipur and Arunachal Pradesh, the original jurisdiction of the Gauhati University covering the entire N.E. Region, has been considerably reduced. Still, the University maintains its predominant position as the largest institution of higher education in the region. It exercises academic jurisdiction over sixteen districts in Assam. The University has facilities for study and research in almost all the disciplines of Science, Arts, Commerce, Engineering, Law and Medical Sciences. Thus, it is a traditional multifaculty university.

The University campus is located at Jalukbari (Western part of Guwahati southern Bank of the river Brahmaputra). It is at a distance of about 12 km. from the city of Guwahati. It has an area of about 250 hectares and has all the civic facilities of a township with a population of more than 5,000 comprising students, teachers, employees and their families.

The University has six faculties: Arts,Science, Commerce, Law, Medicine and Engineering. 39 postgraduate departments are located on the campus. Of these 21 are in Arts faculty, 14 Science, 2 Commerce and 2 in Law, including one Law College (deemed deptt.) for LL.B. classes. Besides this, the University has 119 affiliated colleges for undergraduate courses; 8 of the colleges have also been permitted to conduct postgraduate courses in some selected subjects.

Dibrugarh University

The Dibrugarh University was set up in 1965 on the model of the Gauhati University. Its jurisdiction extends over the districts of Dibrugarh, Golaghat, Jorhat, Lakhimpur and Sibsagar. The University has 15p-Postgraduate deptts. offering courses in Assamese, English, Economics, History, Pol.Sc., Sociology, Anthropology, Applied Geology, Chemistry, Life Science, Mathematics, Physics, Statistics, Petroleum Technology, Commerce and Education. The number of affiliated colleges is 75, all doing UG education by and large.

Enrolment

The enrolment in the PG classes is 3500 in Gauhati

University and 1200 in Dibrugarh University. At the UG level there are in all over one lakh students in Assam. The distribution is as under:

	Gauhati University			Dibrugarh University		
	Male	Female	Total	Male	Female	Total
Arts	31752	17216	48968	13134	9267	22401
Science	14775	2088	16863	3626	752	4378
Commerce	3994	692	4686	3504	332	3836
Total	50521	19996	70517	20264	10351	30615

Growth of Colleges

After the establishment of Gauhati University, higher education received a big boost in Assam. During the fifties 20 colleges were set up. The sixties saw a phenomenal growth of higher education in the country as well as in Assam. Student enrolment in India had an annual growth rate of 14% which declined to 5% in the seventies, went down to zero but went up again in the eighties to 4%. We see a similar trend in Assam in the growth of colleges. During the sixties as many as 70 colleges were set up, in the seventies 55 and in the eighties hardly 26. There was no increase in the number (185) from 1988 to 1991. Of course, an important factor towards depletion and slow growth was the formation of separate States viz. Nagaland in 1963, Manipur - 1972, Meghalaya - 1972, Tripura - 1972, Mizoram - 1987, and Arunachal Pradesh - 1987.

The following Universities came up and got colleges affiliated to them:

NEHU (1973), Manipur Univ. (1980), Arunachal Univ. (1985), and Tripura Univ. (1987).

The growth rate of student enrolment has been more or less the same as all-India but there is some difference in women students as percent of total enrolment as the following figures show:

Year	*All-India*	*Assam*	*Manipur*	*Meghalaya/ Nagaland*
1985-86	31	27	34	37
1989-90	32	30	34	39
1990-91	33	31	34	39

Postgraduate Education

PG education has been by and large confined to the University departments. Of late however the demand for PG education has been increasing and the University deptts. cannot meet all the demands. Hence the universities have permitted some good Colleges under Gauhati University and two under Dibrugarh University, viz., Cotton College, Arya Vidyapith in Mathematics, B.H. College - Commerce, Bajali College - Zoology and Geography, Handique Girls' College - English, Bongaigaon College - English, Darrang College - Assamese, N. Lakhimpur College - Maths, J.B. College, Jorhat - Commerce.

Cotton College

Cotton College offers PG courses in Physics, Chemistry, Mathematics, Anthropology, Botany, Zoology, Geography, Geology, Statistics, English, Economics, Assamese, History, Political Science and Education. The College also offers degree level courses and continues with the +2 Higher Secondary Class in all the important subjects. In an old College with infrastructures old and new, it is almost an impossible task to cater for a wide range of programmes from higher secondary to research without loss of quality. While the College has grown in its status academically, the physical infrastructure of the college including library, labs, classroom accommodation, hostel and other facilities are far from adequate. Many of the old Assam type buildings and the library and hostel buildings need replacement. The College proposes to work out an overall master plan with landscaping for the entire Campus, dismantle the old dilapidated Assam type buildings and construct modern RCC buildings there. All the laboratories – undergraduate major/subsidiary, and postgraduate general and special paper labs – need to be substantially improved and equipped with modern instruments and facilities. Due to the rising cost of equipment and limited funds many labs are almost what they were 20 or 30 years back but they have to match upgraded revised syllabi in their subjects.

It may be interesting to note and compare the development of a college set up in the recent past in a remote place like Dimoria College, Khetri, Kamrup.

The Dimoria College was established in 1979 with a view to fulfil the requirement of higher education of students of about 100 villages of Dimoria, Sonapur, Panbari and Barkhat Mouza which are under Dimoria Tribal Belt and Tribal Development Block. The college is also under Tribal-sub-plan area. It is the lone college in the range of 45 Km. It is a border college bordering Meghalaya and Assam. Out of the total students of over a thousand, 92% belong to SC,ST,OBC and MOBC communities. The college has about 28 feeder high schools and 1 higher secondary school. The Govt. of

Assam has taken this College into deficit system of grant-in-aid in the year 1986.

The College, originally an Arts College with major courses in four subjects, has also introduced the science stream. Over the past years the number of students seeking admission has grown fast and the present trend is very encouraging. Appreciable impact on improvement of standards can be achieved through U.G.C. funding.

Hill Districts Colleges

Education in the Hill Districts of Assam is in general backward. The area has low density of population and transport facilities are uncommon. Only local students are available for admission into the colleges. Hence the enrolment is always on the lower side. The Govt. has set up a few colleges in the two hill districts of Assam. The facilities however are not to the desired level and the University has to relax the norms of affiliation in order to help develop college education in the area. These colleges need special care of the University, State Govt. and UGC with a view to spread higher education even in remote areas so as to develop the region and promote national integration. The Colleges are : Diphu Govt. College, Karbi Anglong District; Diphu Law College, Karbi Anglong District; and Haflong Govt. College, North Cacher Hills District.

State Govt's Plan 1992-97

During the seventh five year plan higher education saw consolidation and quality improvement. The significant achievements were bringing 24 colleges under deficit system of grant-in-aid, creation of 678 additional posts of lecturers and increase in the number of scholarships. The benefit of UGC revised scales of pay was extended to the teachers.

The govt. will develop all its four colleges, particularly the Cotton College. There are 6 more departments which are in the stage of being upgraded to full-fledged PG departments. Its buildings need immediate renovation or replacement. At present there are 151 deficit colleges in the State with the following streams :

Only Arts	92
Only Science	1
Only Commerce	7
Arts & Science	26
Arts, Science & Com.	14
Arts & Commerce	11

Consequent upon change over to the national pattern of 10+2+3 in the State from 1984 the staffing pattern of degree colleges has been revised as per guidelines of the UGC. The present strength of teaching staff in these 151 colleges is 5264. Calculated on the basis of new norms of staffing pattern, requirement of teaching staff is 7032. All the colleges have higher secondary classes in addition with enrolment of more than one lakh but no separate set of teachers, thus causing additional burden on the teachers of the degree classes. But the existing higher secondary schools numbering 477 too cannot cope with the additional one lakh students. Hence the stalemate continues.

The govt. will give greater support for promotion of science through organisations such as Assam Science Society, Institute of Advanced Study for Science & Technology, North-East India Geographical Society, Centre for Plasma Physics, Academy of Mathematics etc., which have been making notable contribution towards promotion of scientific study and research in various disciplines through seminars, publication and conducting research.

The State Govt. also proposed to upgrade the Govt. Science College, Jorhat, to an Institute of Science & Technology.

Besides 151 non-Govt. Colleges under deficit system of grant-in-aid there are 31 Colleges in receipt of ad hoc maintenance grant and 6 more which are not receiving any financial aid from the govt. Every year a number of colleges are coming up in educationally backward areas where there are no facilities for higher education and the govt. has to take good care of them.

Research facilities outside the universities are there in Cotton College alone. The researches carried out there are mainly on the fundamental aids e.g. nuclear physics. There is a Cotton College Research Centre functioning under the patronage of the State Govt. It has quite a few research scholars and some of them are working for research degree. However, it is necessary to encourage research at other colleges as well. As some of the colleges are now conducting PG courses, they will have a better atmosphere for research. The State Govt. has drawn up a scheme to establish 3-4 centres of research in colleges on Zonal basis. This is intended to give a boost to the falling morale of bright and gifted teachers of colleges.

Future Development

The actual expenditure in the higher education sector during VII Plan was about 16 crores. However during the VIII Plan (1992-97) the draft plan proposes an outlay of 105 crores. The thrust of the future development of higher education in Assam should be upgradation and modernisation of facilities and courses. Generally, the colleges are offering only the conventional courses. The restructuring of courses scheme of the UGC has not made any inroads in Assam. Although the universities have drafted some programmes in this respect there is no enthusiasm seen anywhere.

(Contd. on page 16)

Improving the Functioning of Autonomous Colleges in Orissa

S.B. Mohanty*

In mid-1970s the University Grants Commission mooted the concept of autonomous colleges. Tamilnadu was the first State to accept the challenge. At present, it is the State having largest number of autonomous colleges. Recently, its State Level Committee on Autonomous Colleges has submitted its report. The main recommendations of the report focus on aspects such as teacher participation in management of colleges, periodical motivation cum training programme for teachers, and mechanism to look after appeal and grienvances of teachers and students etc. While Tamilnadu has gone to the stage of reviewing functioning of its autonomous colleges, a few other States have recently started autonomous colleges. Orissa is one of such State. It has given autonomy to three general colleges, one in each of the three conventional universities of the State. These three colleges are Government colleges having posts of professors.

Other colleges of State barring two Institutes of Advanced Study in Education do not have posts of professors. More than one year has passed since autonomy was granted to the colleges by the concerned universities. The functioning of autonomy in these colleges has not been commensurate with the ideology behind autonomous colleges as prescribed by the University Grants Commission. Autonomous word here refers to the autonomy given by the affiliating university to the concerned college. The main purpose of the scheme is to facilitate functioning of good colleges so that their students can have better programmes than found in other colleges. Other purposes were experimentation on newer types of combinations of courses, development of innovative courses which are interdisciplinary, community and environment based and applied, comprehensive, and continuous evaluation system making the examination system more reliable, valid, objective and quick, more effective instructional techniques, and extension education.

The autonomous colleges of Orissa are the best colleges in terms of human and material resources. They have most of the talented teachers and students of the State. Each of the college is a mini university. But the colleges have not been able to come forward with better courses. These have been handicapped by administrative inertia. The State Governments had advertised for various posts. The staff members of these colleges as well as from other colleges had applied for these posts. The government colleges of Orissa have posts of lecturers, senior lecturers, readers, selection grade lecturers and professors. The posts are transferable. The purpose behind advertisement for various teaching posts perhaps was to have good teachers in these colleges who can work for a number of years as happens in case of universities. Because of different hurdles, the selection of teachers for these colleges have not been finalised, even one year after the advertisement. To add to this inertia, staff members of these colleges are being transferred to different colleges and vice-versa. There are vested interests. There are teachers who apprehend that if a selection procedure for staff members of autonomous colleges is implemented, they may get transferred to other colleges. It is high time that the Government should finalize its decision whether to have any separate selection policy for teachers of these colleges or not. If there is to be no separate selection policy, this should be made known to the teachers of these colleges, so that the question of the transfer of some of the members may not arise. In order that the teachers are able to carry out certain innovations and experiments, it is essential that they continue in these colleges for a certain number of years, at least for five to ten years.

Different teaching posts in these colleges have been falling vacant for various reasons. For instance, the Postgraduate Department of Education of Gangadhar Meher College has nine sanctioned posts out of which only four posts have been filled up. When the majority of posts in a department are lying vacant, there cannot be scope for experimentation and innovation. The facility of transfer available to State Government employees is the main case that makes posts in G.M. College remain vacant. As most of the teachers are from coastal regions they always try to be posted in coastal regions. Had the policy of selection of teachers for specific autonomous colleges been implemented the vacancies in different posts due to transfer of teachers would have not arisen. The evil of transfer policy that has allowed many posts in western Orissa colleges go

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vacant has also crippled the functioning of autonomy in Gangadhar Mehar College, the only autonomous college of Western Orissa and Sambalpur University. If necessary suitable legislation may be enacted for the purpose of making various teaching posts in these colleges nontransferable.

The Education Commission(1964-66) has suggested separation of Higher Secondary classes from degree colleges. The Government of Orissa has not yet been able to take away +2 classes from degree colleges. The degree college teachers continue to take +2 classes. The +2 classes in schools can have 64 students in a section whereas a +2 class in a college can have 128 students in a section. The +2 classes attached to G.M.College and other autonomous colleges can be distributed among schools situated in the concerned cities. Unless that is done, the initiative of teachers for bringing about innovation and experimentation in curriculum at degree and post degree classes cannot be facilitated. The Principals of these colleges are also burdened by +2 work. They can become more free for autonomous work, if +2 classes are taken away from them.

The students of these autonomous colleges are selected on the basis of their career. In order to ensure quality of admission, these colleges should have their own entrance tests. When the entrance tests for engineering and medical courses are doing well for many years, there should not be any doubt about integrity of entrance tests. These tests may not cover all subjects but only those subjects which a candidate desired to study. For instance at +2 stage, a science candidate appears at English, Oriya, and three optional subjects. At the degree stage, a science candidate offers only three subjects. Hence a candidate seeking admission for degree course should appear only at those subjects (three not five). Similarly for postgraduate study, the candidate should appear at the entrance test only in the concerned subjects. There are universities in country (e.g., Mysore University) which allow candidates of certain minimum age to appear at degree and postgraduate examinations without possessing any formal qualification. The autonomous colleges of the State may need to explore the possibility of allowing certain categories of persons to appear at admission entrance tests. For instance, the *Palla Gayaks* generally possess much knowledge in Sanskrit literature. Some of them may not possess High School Certificate Examination level knowledge in English or Science, but may possess degree level knowledge in Sanskrit or Oriya literature. Again, the examination conducted by various Boards and Universities are mostly unreliable and invalid. The huge number of candidates cripples the system. Hence, in order to have good students, the autonomous colleges should have their own admission tests.

The autonomous colleges of the State do not have curriculum development centres. A curriculum development centre designs courses of study and regulations pertaining to different examinations conducted by Indian and foreign universities. The centre remains open from morning till late evening to provide facilities to the staff members of the college to utilise resources of the centre during and after college working hours. Unless the teachers are made aware of programmes in other autonomous colleges or universities, they shall not be in a position to assess their own position and carry out experiments and innovation.

In order to function effectively, each curriculum development centre should have a part-time incharge and two research assistants with facilities for computer work, xerox, cyclostyling, etc. The incharge of the centre should work jointly with heads of various departments. There should be specific allotment of funds for these centres. Utmost importance should be given to the functioning of these centres so that the teachers of the colleges can get effective guidance. These centres should also work as agencies for providing regular feedback to teachers and for providing periodical refresher courses for senior teachers and orientation courses for new teachers. Those incharge of the centres should have some knowledge and skills on teaching techniques at the level of higher education.

The autonomous colleges need adequate space for carrying out innovation in curricula. The UGC have been advocating interdisciplinary approaches to curriculum and flexibility in combination of courses offered for a particular degree. In order to have flexibility in combination of courses, the autonomous colleges will require more classrooms. Autonomous colleges are also expected to develop community and environment centered curricula. These courses may be optional courses. Making provision for optional courses requires more classrooms. In such circumstances, the autonomous colleges cannot spare their classrooms for +2 classes or for evening (morning) colleges. Hence, the removal of +2 stream and evening (morning) colleges from the campuses of these three autonomous colleges is necessary for proper functioning of these colleges. These +2 classes and colleges may be adjusted in other schools and colleges situated in the concerned cities.

The autonomous colleges are pace setting colleges. They need to experiment on various innovative ideas on examination reform such as open book examination, grading system, assessment of a few students in every period, assessment of students without prior notice, unit tests, assessment in affective areas of development etc. As autonomous colleges are smaller in size, experimentation in these colleges will be easier than conducted in all affiliated colleges of the universities. The experiments found successful in these colleges may later be tried out on larger sample. In such a situation, the autononomous colleges should not be less innovative than the teaching departments of the affiliating universities. At present,the Sambalpur University has allowed its teaching departments to go in for internal and continuous evaluation, whereas, the autonomous college of the university – Gangadhar Mehar College, Sambalpur, has decided that no staff member of the college will evaluate any of the theory papers. This is one example of improper utilisation of autonomous status, in the face of the UGC suggestion that those who teach should examine. This type of decision may make an educationist conclude that the academic committee of he concerned college is not interested in autonomy. This type of situation may have arisen due to the fact hat the college has not been able to apprise its staff members about evils of examination system and various suggestions given by Commissions and Committees set up by the Government of India and the University Grants Commission. Each autonomous college needs a cell for examination reforms. Each of these colleges has a Department of Education which may be given the esponsibility of working out examination reforms. Lack of adequate examination machinery in these colleges might have compelled the concerned colleges to go in for university questions for their autonomous examinations. Dependence on the university forces the colleges to the late schedules of conduct of examinations in the universities. Hence the purpose of speedy leclaration of results of the autonomous college students gets defeated. Therefore, it is necessary to have independent examination cells in each of these colleges or smooth functioning of autonomy. Special funds need to be provided for the purpose.

The staff members of these autonomous colleges need to know about various developments in curricular reform including teaching techniques, course structures, examination systems etc. Visits by staff members o different innovative institutions in the country may help in improvement of their skills. Participation in seminars, conferences and workshops organised by various professional associations may also help them. The Government of Orissa has been sanctioning study eaves with full salary to do doctoral research. Participation in the seminars etc. for at least 10 days every year with special leave will help some of the teachers of hese colleges to improve their standard. Besides, the autonomous college should organize visits to innovative autonomous colleges so that the teachers are in a position to compare their courses, examination systems, teaching techniques, library and reading room facilities, etc. with those of other autonomous colleges. The amount spent for the purpose will give immediate return in the form of better pogrammes. For instance, a visit to the Sri Aurobindo International Centre of Education, Pondicherry, may enable them to see in action Free Progress system of education, project method of teaching, assessment of development of a student in noncognitive areas, flexibility in combination of courses without adhering to strict compartmentalisation of arts, science faculties, etc. A visit to headquarters of Indira Gandhi National Open University may enable them to see in action operation of credit accumulation system, development of course materials which are less dependent on classroom lectures by teachers, etc. A visit to Mysore University Office may enable them to study the provision of allowing a person without possessing any previous formal qualification to appear at university examinations, etc. All these visits should be carefully planned and implemented. Innovations and experimentation in the three autonomous colleges of the State can be given a boost by these study visits. The study visits are equally educative like Ph.D. work. When the State Government is unhesitatingly allowing study leave for Ph.D. work, which is mainly concerned with increase in knowledge in the content, the Government should not go back on attendance in seminars, conferences; etc, and on study visits which focus on improvement of teaching, course designing and examining skills.

In 1960s, the Kothari Commission had suggested formation of school complexes for improvement of quality of programmes in lower level schools with the help of higher level schools. The Archarya Ramamurti report of 1990 has suggested formation of Education Complexes so that Colleges can help schools. The University Grants Commission hopes that the autonomous colleges will provide extension facilities to surrounding industries, organisations, and institutions. The autonomous colleges of the State need a special cell for the purpose. There have been sporadic efforts by some colleges of the State in utilising their own human and material resources for improvement of the quality of programmes in the schools. The children of the college teachers and other employees study in neighbouring schools. Hence, the college employees will not claim extra remuneration for giving some time for helping school programmes, provided the concerned principals take initiative in the matter. Extension/ education complex activities should be integral part of the progrmme of every autonomous college. In early phases, there may be lack of response from the schools as such collaboration will demand more work from the school employees. If the initial inertia is taken care of the schools will no doubt cooperate and the autonomous colleges will be able to have better student population.

Granting autonomy to colleges is a bold decision of the Government of Orissa and the concerned universities. But the authorities should not remain silent after granting autonomy. They should continuously monitor the progress in the functioning of autonomy, lest vested interests should do more harm to the system than they would have been able to do, if there would have been no autonomy. The functioning of autonomy depends mostly on the leadership qualities of the principals of these colleges. As the post of the principals of these autonomous colleges are transferable and the Principals of these colleges generally get promoted to Directorate, there should be some strategies to make the Principals stay in each of the colleges for at least a period of five years so that they are able to carry out necessary innovations.

The possibility of granting autonomy to more colleges – government and private – may be explored so as to instil a spirit of competition for improvement among these autonomous colleges. Granting of autonomy to more colleges will help improve the quality of higher education in the State. Teachers of these colleges will have to work more for developing courses for various examinations, and self instructional packages for students, if necessary, try out different innovative methods requiring more students participation, conducting more numbers of examinations of shorter duration as per the strategy for continuous comprehensive evaluation and becoming more responsible in scoring of answer scripts as the scored answer scripts will be returned to the concerned students for their appraisal. This step will also reduce the burden on the State exchequre for higher education as a lot of funds spent for payment of remuneration to paper setters, members of board of moderators, examiners, tabulators and coding personnel and invigilators, squad members, police parties etc. will be saved. The students of these colleges shall not have to go for mass copying, shall have not to boycott examinations because the questions were out of course or demand answers from the portions not covered by the teachers, etc. The colleges will have better atmosphere for continuous and comprehensive evaluation will require regularity in attendance of classes by the students and regularity in taking of classes by teachers. As described above the present state of functioning of autonomous colleges in the State of Orissa is far from satisfactory. Unless immediate steps are taken by the Government of Orissa and the concerned universities, the three general autonomous colleges of the State will go on inflicting more harm on the system.

College Education in Assam

(Cond. from page 12)

If the universities are lukewarm, no progress can be made in colleges. While many States in the country are going ahead with replacing the conventional courses with modern ones like computer science and electronic science, the colleges in Assam appear to remain inert. Naturally, the potential of the students is not increased in modern areas either to create self employment or to compete with the rest of the country in securing jobs. This also has a telling effect on the economic development of Assam. PCs have been given by the UGC under the VIII Plan. Computer awareness programmes like programming and languages can be undertaken for every student and computer science courses can be offered to those who wish to go further in the line. Teachers have to be trained and re-trained until we have persons qualified in computer science courses from universities in greater number. A regular 3-4 week training programme can be arranged by the State Govt. at the universities for a batch of 20 teachers at a time. Thus all the teachers who can teach computer science in the regular periods or even in the off-hours can be trained within two years. Teaching of computer science *inter alia* will give a new dimension to the higher education in Assam.

The colleges in Assam are of a manageable size as is evident from the data given below for 155 colleges except for 23 colleges which have more than 2100 students.

Size of the Deficit and Govt. Colleges (General)

Enrolment		*Number of Colleges*
Upto 300	-	5
301-600	-	34
601-900	-	46
901-1200	-	23
1201-1500	-	12
1501-1800	-	7
1801-2100	-	5
Above 2100	-	23

Since the number of colleges has not been increasing fast in Assam, unlike Madhya Pradesh for example, the colleges do not have any serious problem of building accommodation. The increase in enrolment has been absorbed by taking recourse to evening/morning shift. However there is a real need for modernisation of courses and exposing the teachers to the emerging subjects through seminars, refresher courses and training programmes. The programmes of teaching & research should have greater impact on the economic and cultural development of Assam than in the past. The universities should lead the colleges and make a concerted effort in this regard.

The Goals of Education

Shri Pranab Mukherjee, Deputy Chairman, Planning Commission, Govt. of India, delivered the Convocation Address at the 10th annual convocation of the Mangalore University. In his learned address Shri Mukherjee raised some basic questions as "What should be the goals of higher education? Should higher education merely pass on expertise in a particular field or should it also mould students to accept and cherish a particular set of values? Should it aim at the expansion of mind and what kind of skills must it impart to achieve that?" He also volunteered an answer, "It was John Ruskin who said 'Education is leading of human souls to what is best, and making what is best out of them; and these two objects are always attainable together and by the same means. The training which makes men happiest in themselves also makes them most serviceable to others and I can't agree with him more." Excerpts

At the time of independence we inherited an established educational framework designed by the British. It had to be reshaped and redefined to suit the needs of a free country. Although many Commissions and Committees adressed themselves to the task of redefining the goals and structures of higher education in post-independence India, it was the New Education Policy in 1986 that, for the first time, analysed in-depth and raised major issues regarding management of higher education. It raised such unpleasant questions as whether higher education should be a free-for-all area, whether the state should continue to be the sole financial source of higher education. It introduced the ideas of cost efficiency, accountability and social relevance in the field of higher education.

Academic Management

Academic management involves a clear understanding of the goals of higher education and planning for the achievement of those goals through development of adequate educational infrastructure.

What should be the goals of higher education? Should higher education merely pass on expertise in a particular field or should it also mould students to accept and cherish a particular set of values? Should it aim at the expansion of mind and what kind of skills must it impart to achieve that? It is John Ruskin who said "Education is leading of human souls to what is best, and making what is best out of them; and these two objects are always attainable together and by the same means. The training which makes men happiest in themselves also makes them most serviceable to others" and I can't agree with him more.

We are living in a constantly changing world. It calls for the acquisition of special skills and those to my mind are: learning to think, learning to learn and learning to create. Thinking is the ability to synthesize and make generalisations, to divide, arrange and re-arrange information to make decisions, solving problems and create opportunities and raise human potential. Great thought put to practice become great acts that take the civilisation forward.

Learning is an essential skill because in the present day environment there is no one-subject or set of subjects which will serve you in the foreseeable future, let alone for the rest of your life. This capacity, let alone for the rest of your life. This capacity to acquire new knowledge and learn continuously is going to be your single biggest asset for success in future.

Creativity is discovering linkages and relationships between seemingly unrelated things. It is a total expression of the inner vision, the capacity to organise familiar material in a fresh way. And creativity is going to be the competitive edge in the organisations of tomorrow.

Another dimension of the higher education is imparting of ethical and moral values. It must create an awareness among students that there are many cultures, many traditions and sets of values in India which are equally valid and viable. As the great philosopher John Searle puts it, Our education must enable our students "to see ones own culture as one possible form of life and sensibility among others". Values imbibed by us during our formative years decide our attitudes and behaviour in later life.

All syllabi, curriculum and classroom techniques have to be revised and re-oriented, keeping in view these factors. In this context, perhaps, we also have to clarify our view of the concept of academic freedom. Albert Einstein said and I quote "by academic freedom I understand the right to search for truth and to publish and teach what one holds to be true". This right implies also a duty: one must not conceal any part what one has recognized to be as true. There cannot be anything known as absolute freedom because a society is made of interactive and interrelated systems which can only exist within the parameters accepted by that society.

Related to the question of academic freedom is the issue of academic excellence. There are arguments – totally valid in an abstract sense – that higher education should be based only on parameters of academic excellence. To my mind, what is more important is the relevance of education to our socio-economic reality. It is distressing to see college after college coming up with the same traditional courses which have particularly no relevance to the socio-economic and cultural environment nor do they incorporate up-to-date knowledge.

Whatever curricular reforms have been undertaken have ended up as marginal additions to the syllabus. A holistic and need-based approach is required to re-orient the education. The National Policy of Education envisages a National curricular framework which would promote values such as India's common cultural heritage, democracy, secularism, protection of environment, removal of social barriers and inculcation of scientific temper. There must be a foundation course which incorporates the dimension of value education.

Today large sections of society have been admitted to universities and colleges, many first generation entrants with no family tradition to prepare them for the rigors of the study. The higher education must become and must be seen to have become relevant to their needs and aspirations. The changing social context and student mix are factors to be reckoned with for reforming educational system. As early in 1976, UNESCO observed: "Higher Education should be more widely involved with society........Its institutions should cease to be passive repositories of knowledge and should take an active role in the problem of development. Education systems particularly as they have evolved in the developing countries are not only urban based and urban-biased but also selective in a way which tends to militate against non-urban environments." For education to function as a force for social and economic transformation, its forms, methods, and contents would also have to be transformed at the same time. The sustained rural/agricultural development is not merely a function of technology or of economics, but requires a fundamental change in values, objectives and very philosophy of development. New strategies of development are required so as to reorient students, made them self-reliant and able to participate in the development process of nation. The universities should ensure keen interest in thrust areas like population control, rural development, health, and science and technology.

Administrative and Financial Management

There has been a steady growth of higher education system in the country since independence. The number of universities has increased from 25 at the time of independence to 175(including 28 deemed universities) and the number of colleges from 700 to nearly 7000 at the end of Seventh Plan. There has been a perceptible change in the trend in the growth of student enrolment during 80s. While student enrolment increased by an average of over 5 percent each year upto 1985-86, the annual growth of student enrolment from 1986-87 has been between 4.1 percent and 4.2 percent each year. It is estimated that if this rate of growth continues, the total enrolment at the end of Eighth Five Year Plan should be around 60 lakh students.

The swelling number of students itself has caused almost intolerable strains on most institutions. The phenomenal increase has very largely added to the ranks of the unemployed and the underemployed. The unit cost of higher education in India is much higher and the social return rate is much lower.

Enormous increase in public expenditure on education has led to severe resource constraint. Comparatively little attention has been paid towards the strategies for raising non-budgetary resources for education. There is enough scope for the involvement of the community. People's initiative and participation should be made a key element in the process of development. Years of government's participation in Developmental work has led to a situation where people have largely become passive observers of such activities. This must change. A lot can be achieved by creating a people's movement with much less financial outlays. The support from the government should be supplemented by adopting cost recovery approach from those who can pay while subsidizing those who cannot. Encouragement should be given to the universities for self-generation of funds through consultancy, commercialisation of research outcomes, interaction with industry, utilisation of educational infrastructure during holidays and involvement of private sector with proper checks and balances.

I would like to suggest that all universities should have their own planning and monitoring boards as a statutory body. There should be a provision for long term perspective planning as well as short range planning. There could be a State level perspective planning division which in turn should have two wings; (1) education planning wing and (2) manpower planning wing. The manpower planning wing should serve as a limb of education planning wing and feed it with the latest data on manpower requirement in different areas based on potential investment as per plan proposals. It would maintain a computerized database with a provision for regular updating. This will help higher education system in our country to optimise resources in this area.

Lastly, I shall touch upon the administrative structure of Indian Universities and Research Centres. Theoretically, we have inherited from the British an ideal administrative structure; the Senate, parallel to the Lower House, to lay down the broad policy-decisions of the University; the Academic Council, parallel to the Upper House, to take all decisions in academic matters; and the syndicate (or the Executive Council, as it is called in some States), parallel to the Cabinet, to look after the day-to-day administration. The Vice-Chancellor is supposed to only execute the policies and decisions of the Senate and the Academic Council. Such an arrangement is leading to centralisation and authoritarianism. As in the case of the a nation, the spirit of decentralisation and freedom has to be accepted and practised. The Government, the Vice-Chancellor, the Statutory Bodies, the departmental heads, and finally the affiliated colleges – at each level, there should be clearly demarcated areas in which the authority of each is supreme. If we accept such a principle of administration, we will begin to appreciate the idea of autonomous colleges, autonomous departments and autonomous universities.

To conclude, the great statesman-thinkers, Jawaharlal Nehru said: "If our Universities are well, it is well with the nation." All is not well today either with our universities or with our nation. But there is hope for us! We have rich traditions, abundant manpower, enormous technical knowhow and extraordinary resilience. It is for us, you and me and everyone else in this country to see that all turns out to be well with our universities as well as our nation.

Refresher Course in Mathematics

The Academic Staff College, University of Madras, in collaboration with the Ramanujam Institute for advanced study in Mathematics has so far conducted ten Refresher Courses in Mathematics. In most of these Refresher Courses it was planned to have exposure of participants to lectures by well-known Mathematicians. In a few programmes participatory learning through mathematical problem solving was also introduced. The experience gained through those Refresher Courses revealed the following two issues: (1) difficulty of teachers of undergraduate classes in comprehending lectures in higher Mathematics, and (ii) inadequacy of books by foreign authors in the context of teaching in India.

Noting that there is a tendency either to ignore a substantial part of the syllabus for the topic "Real Analysis" in the undergraduate course or to inculcate rote memory as in the postgraduate stream, the Ramanujam Institute for Advanced Study in Mathematics and the Academic Staff College decided to make the eleventh Refresher Course in Mathematics specially addressed to undergraduate teachers and that too in the nature of a participatory indepth study of "Real Analysis'. The Refresher Course so conducted formulated as a package scheme to create source materials for teaching the course in Real Analysis of the core subject of B.Sc. or B.Sc.(Hons) programme in almost all Indian universities. Prof. M.S. Rangachari of Ramanujam Institute for Advanced Study, who designed the programme, was the coordinator for this programme. Only motivated teachers who were keenly interested in the subject and who had been teaching Real Analysis at B.Sc. course for more than 8 years from Tamilnadu, Pondicherry, and Kerala State were invited to participate in this programme. The participants were informed about the expectation from them and the goal of an end-product in the form of a source material for teaching the subject with lot of motivation examples, non examples, counter examples etc supplementing the usually prescribed textbooks.

The participants were divided into three groups to discuss allotted topics with the resource persons and make ready the material related to the topic. Every participant got equal opportunity to express his/her views and to discuss over it with the help of resource persons. All this was made possible due to the following facts:

(i) The participants were divided into small groups to discuss the topics under the respective resource persons and thereby individual attention was made possible.

(ii) With the aim of achieving the goal of producing a source material as a guide book to the teachers handling the subject, every participant was made to work hard and to contribute his/her idea in the form of giving examples, counter-examples etc which were not usually found in the text-books.

Over 30 teachers from different colleges and universities, participated in the programme.

From Kootiyattam to Computer

The Academic Staff College of the University of Calicut recently conducted a four-week refresher course for University/College Teachers of Sanskrit. In various sessions, thirty-one teachers, drawn from different institutions of India attended and about forty lectures and demonstrations were delivered by eminent Indologists and other scholars on topics ranging from Kootiyattam, the traditional Sanskrit stage of Kerala to Sanskrit as a computer language. The topics discussed included linguistics, Indian Philosophy, Comparative Aesthetics, Paniniyan Studies, Musicology, Indian Painting, Vedic Studies and Kavya literature.

The thrust area of the course was Sanskrit language and literature and accordingly, all the linguistic and cultural aspects of Sanskrit language were discussed in the course. Dr. Kunjunni Raja and Dr. Srimannarayana Murti exhaustively dealt with linguistic problems of Sanskrit. Dr. P. Naryanan Namboodiri reviewed the history of Sanskrit grammar and Prof. V.V. Sarma explained the Karaka theory. Dr. Saroja Bhate reviewed the research carried out in Paniniyan Studies. Dr. T.B. Venugopala Panicker discussed ancient Indian Phonetics from the point of view of modern linguistics.

Dr. V.N. Jha and Dr. Prahlad Char handled topics related to Nyayavaisesika and Epistemological Principles of Indian Philosophy.

A topic which attracted widespread interest was the closeness of Sastraic Sanskrit with the Computer Language. Dr. Jha neatly summed up the features of the 'disambiguated' Navyanyaya language which closely resembles languages used for generating artificial intelligence.

Indian philosophical thought was

discussed by Dr. N.V.P. Unithiri,. Prof. R.V. Potti and Dr. K.N.N. Elayath.

A salient feature of the course was the importance given to fine arts which are not given due importance in Sanskrit studies. Kalamandalam Ramachakyar and Girija gave a clear exposition of the theatrical practices of Kootiyattam in their lecture-cum-demonstration. Dr. T.N. Vasudevan initiated the teachers to the subtleties of Indian music in his demonstration. Dr. C. Rajendran gave a lecture on Indian painting and highlighted its features like colour combination and three-dimensional techniques. Dr. N.V.P. Unithiri talked on technical literature. Dr. A. Achyuthan, Director, Academic Staff College, gave a lecture on the units of measurement in ancient Indian architecture.

Another area which received much attention was interdisciplinary studies. "If Sanskrit is to thrive in the modern age", pointed out Dr. Rajendran and Dr. Narayanan Namboodiri, the Co-ordinators, "we have to approach it from an essentially modern angle and interpret ancient thought in modern idiom". Dr. Rajendran reviewed Sanskrit Poetics from a comparative perspective. Dr. C.P. Achuthan Unni gave a talk on comparative stylistics. Dr. R. Viswanathan gave a talk on Arestotlian concept of Catharsis and Dr. C.P. Sivadasan reviewed modern trends in linguistic studies.

Women & Equality

The Women's Studies and Development Cell of the S.D. College, Muzaffarnagar, recently organised a two-day Functional Workshop on 'Women and Equality'. The purpose of the workshop was to make the youth aware of the situation and empowerment of women, and girls. The topics discussed at the workshop included i) The emancipation of Indian Women, ii) Women and defence services, iii) Crime against women, iv) The Acts and their applicability - Dowry Prohibition Act, Sati Prevention Act, The Indecent Representative of Women Act, Immoral Traffic (Prevention) Act, Child Marriage Restraint Act, v) Dowry deaths, and vi) National Commission for Women. Dr. L.N. Mittal, Principal S.D. College and chairperson of the Women's Studies Cell, introduced the topic and presented a global picture of violence, crime and discrimination against women after the convenors explained the objectives and theme of the workshop.

The papers presented included (i) Value System (ii) Status of Women, (iii) Declining sex ratio (iv) Sati system in its ramifications, (v) Dowry Prohibition Act, (vi) Muslim Personal Laws, (vii) National Commission on Women, (viii) Women's emancipation, (ix) Human Capital Formation, and (x) Over-view of Laws relating to women with special reference to preventive and enabling laws.

The workshop was attended by Principals of local postgraduate College and Girls' Polytechnic, teachers, social workers, housewives and students.

Haryana to Revamp Technical Education

The Haryana government is reported to have decided to develop and expand technical education in the State in a big way with World Bank assistance of Rs 81 crore. According to available information, under the World Bank project, four new polytechnics at Hissar, Narnaul, Uttawar and Faridabad would be established. The establishment of these four polytechnics would cost Rs 32 crore.

It is also proposed to start some diploma and advanced diploma courses in emerging fields of technology such as electronics and communication engineering, computer engineering and ceramic engineering in the existing polytechnics at a cost of Rs 7.94 crore. Security engineering would also be introduced in the polytechnics to give training to the students in self-defence.

The other thrust areas under the World Bank project would be the introduction of multi-point entry and credit system at the government polytechnic at Ambala besides providing 195 additional staff residences and 270 additional hostel seats for boys in existing poly-technics.

The Government Institute of Engineering, Sonepat, which is at present offering diploma courses in three disciplines, has also been covered under the World Bank project. The institute will be fully modernised and strengthened with the introduction of new courses, hostels for boys and girls, machinery and equipment as well as computer facilities.

At the postgraduate diploma level, the Institute of Hospital Engineering at Rohtak, an Institute of Management and Pharmacy at Adampur in Hissar district and a government polytechnic for women at Sirsa have been set up. Besides, a number of courses in new fields of technology, such as computer engineering, electronics, chemical engineering and production engineering have been added in the existing polytechnics.

The scheme for a new engineering college at Hissar has been recently approved by the All India Council for Technical Education and necessary action to implement this project is being taken.

A proposal for the establishment of a new polytechnic at Manesar in Gurgaon district is under active consideration and approval for it will, hopefully, be received during the current year.

The State Government has decided to open at least one polytechnic in each district. Accordingly, schemes for setting up government polytechnics in the remaining districts of the State — Kaithal, Jind, Rewari, Bhiwani and Kurukshetra have been included in the proposed Eighth Five-Year Plan.

Equality in Educational Opportunities

The Department of Education, Gauhati University, recently organised a seminar on Equality in Educational Opportunities. Sponsored by AIU, the seminar was in a series of seminars to commemorate the Centenary Celebrations of Baba Saheb Ambedkar, the father of Indian Constitution.

The seminar was inaugurated by Dr. N.K. Choudhury, Vice-Chancellor of Gauhati University while a renowned Anthropologist, Dr. B.M. Das presided. Dr. B. Pakem, Vice-Chancellor of North Eastern Hill University and Dr. M.M. Sarma, noted Sanskrit Scholar also addressed the seminar. Prof. R. Debi, Director of the Seminar, explained the purpose of the seminar.

The topics discussed at the seminar included — (1) Constitutional Provision regarding Equality and Equal Educational Opportunities; (2) Constraints of equal educational opportunities: (a) Economic, (b) Social (c) Political; and (3) Education of the Disadvantaged : (a) Girl child (b) Women (c) Handicapped — physical, mental, social and economic.

Some pertinent problems like providing equal opportunity to women, socially weaker communities, disadvantaged groups etc were thoroughly discussed and various suggestions made. The seminar stressed the need for a change in the present reservation policy and to offer more facilities to weaker sections of the community.

Kakatiya Varsity Plans New Courses

The Kakatiya University proposes to introduce more specialisations at the postgraduate level. These include Rural Marketing in Commerce, Rural and Tribal Development in Economics, Human Resource Management in Public Administration, Material Science in Physics, Biotechnology in Botany, Cytogenetics & Molecular Biology in Zoology, Pharmacology and Medicinal Chemistry in Pharmacy. Efforts are also being made to start a Master's course in Computer Applications (MCA) and to establish a Centre for Telangana Development Studies.

The university also proposes to increase the intake in B.Sc. computer science at Arts & Science College from 10 to 30, improve infrastructural facilities at the Postgraduate Centres in Nirmal and Khammam, bring out a quarterly newsletter to keep the teachers and the students informed about the various activities and also to make the university more visible to the outside world, and publish a brochure containing placement information for the benefit of the students of Management courses of the university.

Bhasin Awards Announced

Seven scientists have been selected for the Bhasin Awards for 1991 for their outstanding contribution in their respective fields. The Awards are given by the Om Prakash Bhasin Foundation for Science and Technology.

The awardees are Dr. R.S. Paroda (Agriculture and Allied Sciences), Deputy Director General, Indian Council of Agricultural Research, New Delhi; Dr. Y.L. Nene (Agriculture and Allied Sciences), Deputy Director General, International Crops Research Institute for the semi-arid Tropics, Patancheru; Dr. S. Ramachandran, (Biotechnology), Secretary, Department of Biotechnology, Ministry of Science and Technology, New Delhi; Dr. Rajinder Kumar (Engineering and Transportation), Dean, Engineering Faculty, Department of Chemical Engineering, Indian Institute of Science, Bangalore; Prof Madan Mohan (Health and Medical Sciences), Advisor, Ophthalmology, Ministry of Health and Family Welfare, New Delhi; Prof. U.C. Chaturvedi (Health and Medical Sciences), Microbiology, K.G. Medical College, Lucknow and Dr. T.K. Bose (Space and Aero space), Dept. of Aerospace Engineering, IIT, Madras.

Consumers' Day

The Department of Bank Management,Alagappa University, celebrated Consumer's Day by arranging a discussion on 'Consumer Protection.' In her introductory remarks Ms K Alamelu, faculty member, highlighted the problems of the Indian consumers and the steps taken by the Government to protect the interests of the consumers. Dr. S. Sudalaimuthu, Reader, Department of Corporate Secretaryship, in his address depicted the ways through which consumers were cheated in India. He highlighted the various legislative measures for consumer protection. The salient features of the Consumer Protection Act 1986 and the loopholes in its implementation, the role of consumer courts and consumer redressal forums were also focussed by the speaker.

This was followed by the interaction between participants and the speakers. The meeting concluded that creating an awareness among consumers and envisaging healthy competition among enterprises are the remedies to overcome the situation.

Dr Mitra elected to IEP

Dr C.R. Mitra, former Director, Birla Institute of Technology and Science, Pilani & President Association of Indian Universities has been elected member of UNESCO's Institute for Educational Planning (IEP).

Dr Mitra's election to the prestigious UN body comes in recognition of his valuable contribution in the field of educational planning.

As member of the Institute's Council of Consultant Fellows, Dr Mitra would be advising on the Institute's training and research programmes.

News from Agricultural Universities

Workshop on Forage Crops

Dr. A.L. Chaudhry, Vice-Chancellor, Chaudhary Charan Singh Haryana Agricultural University, Hisar, recently inaugurated the XVI Workshop of All India Coordinated Research Project on Forage Crops at the university campus. Held in collaboration with the Indian Council of Agricultural Research (ICAR), New Delhi, the workshop was attended by over 125 delegates from all over the country. Dr. R.S. Paroda, Dy. Director General (Crop Sciences), ICAR, presided.

In his inaugural address Dr. Chaudhry said that on achieving the green revolution and ushering in the White Revolution, the task of forage research scientists had become difficult as area under fodder crops was decreasing at a fast rate, on the one hand, and animal population increasing on the other. He said that one of the main reasons for poor milk yield of cattle and buffaloes in India was inadequate supply of nutritious fodder to the animals. Therefore, feeding our animals with sufficient quantity of green and nutritious forage was very necessary, he added.

Delivering the presidential address, Dr. Paroda said that Haryana, known for its efficient and best breed of animals, was losing year by year the best breed of buffaloes. He urged the participants to evolve a suitable strategy with which animal husbandry profession could be made an economically viable profession. Dairy husbandry cannot survive without fodder crops as 60% of its expenditure was on feed and fodder, he opined. For the efficient management of animals, Dr. Paroda called upon the participants to popularise Chinese techniques where animal population was maintained totally on scientific lines. Dr. Paroda urged the participants to evolve and popularise animal-development strategy at the national level. To achieve this, he said that seed production on the basis of private sector, integrated pest management and genetic resources development on areawise must be taken up on priority basis.

Speaking on the occasion, Dr. Panjab Singh, Director, Indian Grassland Forage Research Institute, said that there was need to introduce legume crops including different types of grasses and salt bushes so that 70% of the permanent pasture land which was left open for grazing could be utilized resulting in increased production of green fodder.

News from UGC

Countrywide Classroom Programmes

Between 8th May to 15th May, 1992 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 1.00 p.m. to 2.00 p.m. and 4.00 p.m. to 5.00 p.m.. The programme is available on the TV Network throughout the country.

Ist Transmission

1.00 p.m. to 2.00 p.m.

8.5.92

"We, The People - II: The Constitution and Minorities"
"Innovation : Rain Or Shine"

9.5.92

"The Potato Eaters - II"
"Colour of the Costumes"
"The Week Ahead"

10.5.92

No Telecast

11.5.92

"Economic Perspective : Devaluation of Currency"
"Contact Lenses"

12.5.92

"Mystery of Colours"
"Contract Act-II"
"Philosophy of Homoeopathy"

13.5.2

"Artifical Inserrihation"
"Archaeometry"
"Consolidation of Arable Land"

14.5.92

"Computers Network - II: Principles of Packet Switching Network"
"Techniques of Architectural Sketching"
The Pied Piper of Wimpole Street-I"

15.5.92

"We, The People III : The Constitution and Social Equality"
"Human Equilibrium"
"The Week Ahead"

2nd Transmission

4.00 p.m. to 5.00 p.m.

8.5.92

"Parabola-II"
"Berlin and its Status"

9.5.92

"The Hand that creates-III: History of art-I"
"Odissi: The Art of expression-II"
"The Week Ahead"

10.5.92

No Telecast

11.5.92

"Treasure from Thermal Spring"

"National Income: Concepts and Measurements"

"Intraocular Lens"

12.5.92

"Synthetic DNA: Uses and Applications"

"Quantum Leap"

"German Studies on Indology"

13.5.92

"Facets of Biotechnology"

"Forts of the Deccan-III: Gol conda Fort"

"Blood Clotting: Gift of Nature"

14.5 92

"Electronics-I: History of Electronics"

"Self Development-I"

"History and Literature Common Meeting Grounds"

15.5.92

"The Untold Story"

"The Legacy of Wilhelm Von Humboldt"

"The Week Ahead"

No Aid for Centre-Based Adult Education Programmes

With a view to ensure the involvement of the university system in literacy programme in conformity with the postulates envisaged under the National Literacy Mission (NLM), the University Grants Commission has decided to discontinue the centre-based adult education programmes with immediate effect. The universities and colleges are being asked to conclude ongoing literacy classes by the end of June, 1992 thereafter no financial assistance will be available for such programmes.

The UGC is currently implementing over 21,000 centre-based programmes in the fields of adult education in 93 universities and 1,284 colleges in the country with annual financial supports varying from Rs. 4.46 crores to Rs. 2.40 crores during the last five years.

The universities and colleges are being advised to encourage teachers and students to involve themselves in literacy and post- literacy programmes. The university departments of adult education, in cooperation with other concerned departments and agencies will extend support to the NLM for environment building, training, production of teaching and learning materials, post-literacy and continuing education.

The universities will also work with the National Institute of Adult Education, New Delhi, to develop viable academic programmes of adult education leading to degree, diploma and certificate courses. they are also expected to undertake programmes for development of skill and training of working people and continuing education of professionals.

News from Abroad

Academic Health Hazards

A study conducted by the Scientific Research Institute of the State Physical Culture and Sports Commission reveals that Academics in China die younger than the rest of population. While the average life expectancy of Chinese people has risen to 70 years, intellectuals tend to die in their fifties and sixties.

Seventy percent of academics at professional level and above never reach their sixty-fifth birthday, while only 40 percent of the total population, including manual workers and farmers, die before this age.

The authorities have been aware of the plight of the country's intellectuals for a number of years following earlier studies. But despite promises from individual government officials, very little has been done to improve the situation.

Now some forward-thinking universities are taking action into their own hands. The Beijing Aeronautics and Aviation University has joined with the China Health Education Research Institute to establish a new health promotion centre for the middle-aged.

It will offer health care and physical training courses for middle-aged intellectuals. The university was the first in the country to install up-to-date health monitoring instruments and regular health checks for its staff. A number of other institutions have now announced plans.

Experts believe poor medical care, heavy workloads, poor working conditions and lack of time for recreation and physical exercise are the main causes of academic ill-health. They also lack knowledge of basic health care.

Tumours and cardiovascular diseases are now the two main killers of Chinese academics, scientists and teachers aged between 35 and 59. They account for 70 percent of deaths among the age group, Dong Jingwu, a senior physician and official of the Chinese Health Education Research Institute, said.

Cerebral vascular diseases and digestive problems were also identified as other threats to intellectuals within the age-group.

Britain to Launch New Engineering Degree

The British Science and Engineering Research Council (SERC) is to open up a new form of higher degree in the next academic year with the launch of the EngD degree in engineering.

The new degrees are being launched in Warwick, Manchester and Wales, with an initial intake of 10 students per centre, and will take four years to complete. The people doing them will be called research engineers, not students, and to back up their higher status will be paid £ 9,500 a year. They will spend up to half of their time in a company, not a university, and will have to take courses and pass exams as well as doing research.

Sir Mark Richmond, chairman of SERC, said : "We expect to put more resources into this sort of engineering education in future, even at the expense of more traditional research leading to Ph.D degrees."

The new degrees have been introduced after a study led by John Parnaby, managing director of Lucas Applied Technology. Dr Parnaby found that the UK has nothing comparable to the German system of industrially-linked academic research, especially its system of applied research institutes at technical universities. He said: "Germany has the best system in the world and the degrees now being started will allow us to reach the point they got to 60 years ago."

Dr Parnaby said that German industry now has a massive subsidy from "doctorate factories" which carry out large amounts of industrial research at little or no cost to industry.

The EngD scheme will start on a much smaller scale. But Kumar Bhattacharya, head of the University of Warwick manufacturing group, said that his centre alone could build up to 80 research engineers in the next four years. Most of the companies involved will be in the automotive and aerospace industries, which are already the main backers of the Warwick group.

He said that the Warwick EngD degree will also involve a senior German industrialist or academic, to ensure that it is comparable to the German Dr Ing degree which is its nearest equivalent in overseas education practice.

Ray Leonard of the University of Manchester Institute of Science and Technology said that the Manchester EngD already involves UMIST and the University of Manchester, and will also include Manchester Polytechnic and Salford University from 1993. He said that the research engineers will have to take the whole of the existing diploma in manufacturing management as well as taking taught lectures from existing undergraduate and Master's courses.

The third consortium is led by University College Swansea and includes University College Cardiff and the North East Wales Institute of Higher Education. It will focus on materials technology.

The three groups were chosen from 50 initial applicants and a shortlist of eight, and the number of groups involved will grow if the scheme is seen to succeed. The initial groups will get £ 30,000 a year, plus £ 2,000 per student, for managing their end of the scheme.

Jefferson Fellowships 1993

The East-West Institute of Culture and Communication, Honolulu, Hawaii, invites applications from senior Indian news editors, writers and broadcasters for a Jefferson Fellowship. The program begins on April 4, 1993 for six Americans and eight men and women from Australia, Hong Kong, India, Indonesia, Japan, Pakistan, the People's Republic of China, and the Philippines.

After a month of intensive study at the East-West Centre, the Americans will go to Asia Pacific countries for reporting and orientation experiences while their Asia-Pacific counterparts travel on the U.S. mainland for a month. The program ends on June 11 after the Fellows regroup at the East-West Centre for final discussions and evaluation of their cross-cultural experiences and travel.

Priority in selection of the Jefferson Fellows is given to those whose careers and news organizations would be enhanced by personal exposure to news issues linking the United States and the Asia-Pacific region. Candidates must be nominated by their employing organizations, which agree to cost-sharing.

There are no minimum or maximum age or experience limits for the Jefferson Fellowships. The program's selection committee, however, gives weight to both the experience and responsibility levels of each candidate, as well as to the applicant's potential for significant contribution to journalism after completing the program. In recent years, most Jefferson Fellows have been between 30 and 50 years old.

Further details and application forms may be obtained from the Program Officer, U.S. Educational Foundation in India, "Fulbright House", 12 Hailey Road, New Delhi - 110001. The last date of receipt of application is 15 July, 1992.

COMMUNICATION

Professor Dandekar's Reforms in Higher Education

A Comment

Prof. Dandekar in his paper, 'Reforms in Higher Education' (*University News*, Nov.25,1991, Pp.1-11) focuses on two crucial constituents of the educational system: teachers and students. In one way it is unexceptionable , for, so far as these two components are in tandem, education apparently, can go on.

However, Prof. Dandekar appears to be harsh on both these groups. But, as we will see later, it is only the appearance. In actuality, he is all for the well being of both, and more so of the teacher. He is also for maintaining the sanctity of the university degree and diploma. Needless to say, Prof. Dandekar is in favour of university examinations based on which degrees are awarded.

In fact the thrust of his arguments totally hinges on these two, namely the degrees and the examination. For, the reason students flock to private coaching classes of which Prof. Dandekar is an ardent supporter, is that these institutions prepare students for successfully facing examinations and thereby securing the required marks for degree, diploma etc.

The Professor snipes at those "self-righteous teachers of the colleges and universities" who deride the coaching classes. The educational objectives of the coaching classes are clear and well-defined and teachers there are single-minded in their pursuit. The economist in Prof. Dandekar, we may surmise, can easily visualise a true market in operation with wholesome benefits to both teachers and students – the sellers and the buyers.

He calls for opening up of the system whereby "there need be no regulation of fees the teachers may charge the students for the courses they will teach". The market will attain equilibrium in favour of students when teachers start competing among themselves, the Professor argues. It is natural that teachers can make a tidy amount and the motivation for money will impel teachers to be more and more competent. With a teeming middle class and the employment linked to degrees, there can be no better defence of teachers' interest!

This perspective of the "conventional economic calculus" as Schumacher would have put it, is the strength as well as the weakness of Prof.Dandekar's "radical" proposal. The strength is that it has the"force and action" as Acharya Vinobha Bhave once said about science, in another context (The Acharya had noted that Science has force and action but no direction). The strength is also because it is a piece with the current trends and the mantras of the Market.

The weakness is that, with due respect to the Professor, his idea of university education is at odds with the age old concept of education in general and that of liberal education of universities world over in particular, which is to help "in unfolding, in the development of the individual","in releasing his inherent potential",in "developing not only mental skills (like language comprehension and statistical skills) but also intellectual competence which is the capacity to make informed and responsible moral choices and inculcating spiritual values". (*Educacion, educatio prolis* is a latin term which means the nurturing, the feeding, the warming, the protection a sow gives to her piglet, a bitch gives to her puppies or a mother gives to her *infantes* who are in law are not human beings yet).

Even in the more practical present day terms education has more than the purpose of just providing skilled personnel to the existing market. For the empowerment of the poor of this country (of which the Professor whose seminal work on defining the poverty in India is a classic, should know better) all avenues of education should be open and accessible to them. Prof. Dandekar's dictum that primary education is investment in human beings with emphasis on human beings whereas higher education is "also investment in human beings but now the emphasis is on investment" will only be hailed for its clever phraseology.

More than anything, if Prof. Dandekar's idea of wholesale privatising succeeds, as he himself concedes "there are *a great many things* (emphasis mine) which are socially and culturally valuable but which the market will not support, not because people do not understand their social and cultural value but because they have other priorities". The learned Professor should know that those of pure economic value may be given a short shrift too, as they do not serve the "immediate self-interest" as the US administration had woken up to the fact lately. Despite having a far more "conservative" system (with about 80% of teachers in permanent position) than the one Prof. Dandekar advocates, in the US students go for "soft" options that include computers, communications, law and management, and fields like Chemistry and Mathematics are deserted (Andrew Hacker, The Decline of Higher Learning, New York Review of Books, Feb. 13, 1986, pp. 35-42).

Prof. Dandekar's problem is that in his eagerness for reform he glosses over the fact that a reductionist's quick-fix solutions to emergent problems are no solutions at all. In fact to those of us who have a proclivity to fall into such traps Gandhiji had shown a way : he said, "I will give you a talisman. Whenever you are in doubt, whenever the self becomes too much with you, conduct the following test. Recall the face of the poorest and the weakest you may ever have seen and ask if the step you contemplate will be of any use to him. Will he be gained by it?"

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RESEARCH IN PROGRESS

A list of Research Scholars registered for Doctoral Degrees in Indian Universities.

PHYSICAL SCIENCES

Mathematics

1. Anto Lesly, A. **Convergence and its generalizations and programming in analysis.** BHU. Prof S B Lal, Department of Mathematics, Banaras Hindu University, Varanasi.

2. Dwivedi, Devesh Kumar. **Finite difference schemes.** BHU. Prof R S Pathak, Department of Mathematics, Banaras Hindu University, Varanasi.

3. Mishra, Jai Prakash. **Heat mass transfer.** BHU. Prof R N Pandey, Department of Applied Mathematics, Banaras Hindu University, Varanasi.

4. Mishra, Ram Sajivan. **Computational Mathematics.** BHU. Prof R N Pandey, Department of Applied Mathematics, Banaras Hindu University, Varanasi.

5. Mishra, Sanjay Kumar. **Flow of viscous incompressible fluids.** BHU. Dr K S Pandey, Department of Applied Mathematics, Banaras Hindu University, Varanasi.

6. Mishra, Shubhada. **A study of the topological category FTS and its other subcategories.** BHU. Dr A K Srivastava, Department of Mathematics, Banaras Hindu University, Varanasi.

7. Singh, Jainendra Kumar. **Some studies in relativistic cosmology.** BHU. Dr Shree Ram, Department of Applied Mathematics, Banaras Hindu University, Varanasi.

8. Singh, Satya Bir. **Mathematical programming aspects of operation research.** BHU. Prof S N Lal, Department of Mathematics, Banaras Hindu University, Varanasi.

9. Singh, Shailendra Vikram. **Theory of rings and models.** BHU. Dr B M Pandey, Department of Applied Mathematics, Banaras Hindu University, Varanasi.

10. Tripathi, Vinod Kumar Mani. **A study on submanifolds and manifolds with various structure.** BHU. Dr (Miss) Kalpana, Department of Mathematics, Banaras Hindu University, Varanasi.

Statistics

1. Singh, Anil Kumar. **Biostatistical study of emotional disorder.** BHU. Dr (Mrs) Manju Pandey, Department of Statistics, Banaras Hindu University, Varanasi.

2. Singh, Shailesh Kumar. **Reliability and life testing.** BHU. Dr (Mrs) Manju Pandey, Department of Statistics, Banaras Hindu University, Varanasi.

Physics

1. Bhandari, Mukut. **Investigations on high temperature superconductors: Bismuth and thalium bearing H T C S C materials.** BHU. Dr A K Singh, Department of Physics, Banaras Hindu University, Varanasi and Prof O N Srivastava, Department of Physics, Banaras Hindu University, Varanasi.

2. Biplev Kumar. **Theory for liquid crystals.** BHU. Dr Shri Singh, Department of Physics, Banaras Hindu University, Varanasi.

3. Mishra, Vidya Bhushan. **Micropulsation studies.** BHU. Prof K D Misra, Department of Applied Physics, Banaras Hindu University, Varanasi.

4. Pandey, Ram Pujan. **Study of drift wave instability in magnetoplasma.** BHU. Prof K D Misra, Department of Applied Physics, Banaras Hindu University, Varanasi.

5. Pandey, Rama Shankar. **Low frequency emission from magnetoplasma.** BHU. Prof K D Misra, Department of Physics, Banaras Hindu University, Varanasi.

6. Prasad, Varidhi. **Studies with nuclear track detectors.** BHU. Dr S K Bose, Department of Physics, Banaras Hindu University, Varanasi.

7. Praveen Kumar, D. **Studies on low latitude dynamical progress: Middle atmospheric dynamics.** Delhi. Dr O P Magpal, Swami Shardanand College, Alipur, Narela, Delhi and Dr V B Bhatia, Department of Physics, University of Delhi, Delhi.

8. Ramachandran, M N. **Synthesis, growth and characterisation of Al-Mn-Cn (Al-Mn-Ru materials) Mn Cd.** BHU. Prof O N Srivastava, Department of Physics, Banaras Hindu University, Varanasi.

9. Ranjay Kumar. **Shape and structure at higher angular momentum.** BHU. Dr L Chaturvedi, Department of Physics, Banaras Hindu University, Varanasi.

10. Saroch, Mamta. **Thermodynamics and phase stability in metallic systems.** BHU. Dr K S Dubey, Department of Applied Physics, Banaras Hindu University, Varanasi and Prof P Ramchandra Rao, Department of Applied Physics, Banaras Hindu University, Varanasi.

11. Shekhar, Sudhanshu. **Micro processor based industrial measurements.** BHU. Dr Hausila Singh, Central Electronics Engineering Research Institute, Pilani and Prof K K Dey, Department of Physics, Banaras Hindu University, Varanasi.

12. Sinha, Sudip. **High energy nucleus-nucleus collisions.** BHU. Prof S K Tuli, Department of Physics, Banaras Hindu University, Varanasi.

13. Verma, Alok Jyoti. **Studies in atomic and molecular physics.** BHU. Prof D K Rai, Department of Physics, Banaras Hindu University, Varanasi.

Chemistry

1. Ali-Massahi. **Chemical analysis by voltammetric techniques.** BHU. Dr B B Prasad, Department of Chemistry, Banaras Hindu University, Varanasi.

2. Dixit, Rajesh Kumar. **Adsorption studies by radiotracer technique.** BHU. Dr S P Mishra, Department of Chemistry, Banaras Hindu University, Varanasi.

3. Kamlesh Kumar. **Dynamics of membranes processes.** BHU. Dr P C Pandey, Department of Chemistry, Banaras Hindu University, Varanasi.

4. Mani, N. **Investigation on the inhibition of corrosion of metals in different electrolytes.** BHU. Dr S Venkata Krishna Iyer, Central Electro-Chemical Research Institute, Karaikudi and Dr Lal Bahadur, Department of Chemistry, Banaras Hindu University, Varanasi.

5. Pillai, Suman Latha. **Spectroscopic and structural studies on some transition metal complexes.** BHU. Dr T R Rao, Department of Chemistry, Banaras Hindu University, Varanasi.

6. Rai, Seema. **Electro organic synthesis.** BHU. Dr R A Mishra, Department of Chemistry, Banaras Hindu University, Varanasi.

7. Sehgal, Arti. **Synthetic methodologies using readily available reagents.** Delhi. Dr Jitender M Khurana, Department of Chemistry, University of Delhi, Delhi.

8. Singh, Aparna. **Transition metal complexes of nitrogen, oxygen and sulphur ligands.** BHU. Dr N K Singh, Department of Chemistry, Banaras Hindu University, Varanasi.

9. Singh, Kumar Samir. **Corrosion and inhibition of metals in acidic solutions.** BHU. Dr M M Singh, Department of Applied Chemistry, Banaras Hindu University, Varanasi and Dr A K Mukherji, Department of Applied Chemistry, Banaras Hindu University, Varanasi.

10. Singh, Shri Prakash. **Electrochemical studies of oxygen evolution on perovskite type oxides.** BHU. Dr Ravindra Nath Singh, Department of Chemistry, Banaras Hindu University, Varanasi.

11. Subedar Singh. **Chemical investigation of indigenous drugs.**

BHU. Dr V B Pandey, Department of Medicinal Chemistry, Institute of Medical Sciences, Banaras Hindu University, Varanasi and Dr V P Singh, Department of Medicinal Chemistry, Institute of Medical Sciences, Banaras Hindu University, Varanasi.

12. Sundd, Sonu. **Electro analytical studies in aqueous media.** BHU. Dr B B Prasad, Department of Chemistry, Banaras Hindu University, Varanasi.

13. Usha Rani, Gunturi Naga. **Membrane transport studies.** BHU. Prof R C Srivastava, Department of Chemistry, Banaras Hindu University, Varanasi.

Earth Sciences

1. Chaturvedi, Girija Shankar. **Seismic wave propagation and analysis.** BHU. Dr O P Trehan, Oil and Natural Gas Commission, Egmore, Madras and Prof A Sen, Department of Geophysics, Banaras Hindu University, Varanasi.

2. Chowdhary, Girish Chandra. **Hydrogeology, geology and ground water resources and its impact on environmental pollution of Bhadohi, Gyanpur, Varanasi, Chaundauli Tehsils of Varanasi.** BHU. Dr R N Tiwari, Department of Geology, Banaras Hindu University, Varanasi.

3. Das, Kanhu Charan. **Multipurpose projects and their impact on ground water regime.** Delhi. Dr S K Singh, Department of Geology, University of Delhi, Delhi.

4. Dwivedi, Arun Kumar. **Geochemistry of the Newaria carbonatite complex, District Udaipur, Rajasthan.** BHU. Dr R K Srivastava, Department of Geology, Banaras Hindu University, Varanasi.

5. Goswami, Anupam. **Sedimentary environment of Athgarh Basin, Orissa.** BHU. Prof B K Chatterjee, Department of Geology, Banaras Hindu University, Varanasi.

6. Lal, Babu. **Fluid dynamics and its application in geophysics.** BHU. Dr B Banerjee, Geological Survey of India, Jaipur and Prof T Lal, Department of Geophysics, Banaras Hindu University, Varanasi.

7. Malviya, Sudhanshu Chandra. **Applications of quantitative stratigraphic techniques to the selected areas of West Coast Basin.** BHU. Dr K M Nair, Oil and Natural Gas Commission, Bombay and Prof V K Gairola, Department of Geology, Banaras Hindu University, Varanasi.

8. Manoj Kumar. **Photogalvanic studies on atom and molecules.** BHU. Dr S B Rai, Department of Physics, Banaras Hindu University, Varanasi.

9. Mohan, Kshitij. **Neotectonic and climatic controls on terraces along a segment of River Son in U P, India.** BHU. Prof R M Singh, Department of Geology, Banaras Hindu University, Varanasi and Dr K N Prudhvi Raju, Department of Geography, Banaras Hindu University, Varanasi.

10. Mohan, Rahul. **Marine micropalaeontology.** BHU. Dr M S Srinivasan, Scientist, National Institute of Oceanography, Dona Paula, Goa and Dr M S Srinivasan, Department of Geology, Banaras Hindu University, Varanasi.

11. Nisheet Kumar. **Palaeoecology of the Jurassic sediments of Kachchha, Gujarat.** BHU. Dr A K Jaitly, Department of Geology, Banaras Hindu University, Varanasi.

12. Rai, Jai Prakash. **Study of Ganga-Sone Basin with special reference to environmental modelling.** BHU. Dr R P Singh, Department of Geology, Banaras Hindu University, Varanasi.

13. Shambhu Nath. **Geochemical studies and evolution of Dugdha- Naswadi Igneous Complex, District Baroda, Gujarat.** BHU. Dr R K Srivastava, Department of Geology, Banaras Hindu University, Varanasi.

14. Shukla, Siyaram. **Deconvolution of seismic signals and application of pattern recognition to oil and gas exploration.** BHU. Dr R D S Kuswaha, Department of Geophysics, Banaras Hindu University, Varanasi.

15. Singh, Pramod Kumar. **Geochemistry of the rocks occurring around Jaipur, Rajasthan.** BHU. Dr R P Singh, Department of Geology, Banaras Hindu University, Varanasi.

16. Srivastava, Hari Prakash Lal. **Parametric studies of drawdown variation in a well penetrating a confined aquifer.** BHU. Dr M Banerjee, Department of Geophysics, Banaras Hindu University, Varanasi.

17. Tiwari, Vinod Kumar. **Sedimentology of the Jurassic rocks in a part of Kachchh Main Land.** BHU. Dr R N Tiwari, Department of Geology, Banaras Hindu University, Varanasi.

18. Tripathi, Chandra Nath. **Impact of climatic change on crop yield.** BHU. Prof B R D Gupta, Department of Geophysics, Banaras Hindu University, Varanasi.

19. Tripathi, Satish Chandra. **Geology and tungsten mineralisation in the North-eastern part of Almora District, Kumaon, Himalaya, U P.** Vikram. Dr A C Chatterjee, School of Studies in Geology, Vikram University, Ujjain.

20. Verma, Rahulji. **Geochemical evolution of the Samchampi Igneous Complex, Mikir Hills, Assam.** BHU. Dr R K Srivastava, Department of Geology, Banaras Hindu University, Varanasi.

Engineering & Technology

1. Chattopadhyay, Nilratan. **Some aspects of travelling wave structures.** BHU. Prof B N Basu, Department of Electronics Engineering, Banaras Hindu University, Varanasi and Dr P K Jain, Department of Electronics Engineering, Banaras Hindu University, Varanasi.

2. Chopra, A K. **Thermionic cathodes for microwave tubes.** BHU.. Dr W S Khokhle, Central Electronics Engineering Research Institute, Pilani and Dr D S Venkataeswarlu, Department of Electronics Engineering, Banaras Hindu University, Varanasi.

3. Dwivedi, Harish Kumar. **Thermal considerations in design of cathode structures in microwave tubes.** BHU. Dr S N Joshi, Central Electronics Engineering Research Institute, Pilani and Dr D S Venkateswarlu, Department of Electronics Engineering, Banaras Hindu University, Varanasi.

4. Gupta, Vinod Kumar. **Study of concrete at high temperature and remedial measure.** BHU. Prof B N Roy, Department of Civil Engineering, Banaras Hindu University, Varanasi and Dr V Kumar, Department of Civil Engineering, Banaras Hindu University, Varanasi.

5. Mahendra Kumar. **Sediment transport.** BHU. Prof Ashok Kumar, Department of Civil Engineering, Banaras Hindu University, Varanasi.

6. Maity, Sibnath. **Development of indigenous roof support for Indian mines.** BHU. Prof R Nath, Department of Mining Engineering, Institute of Technology, Banaras Hindu University, Varanasi and Prof B B Dhar, Department of Roadway Support and Geomechanics, Central Mining Research Station, Dhanbad.

7. Mishra, Sunil Kumar. **Lead based ferroelectric and superconducting ceramics.** BHU. Dr D Pandey, Department of Material Science and Technology, Banaras Hindu University, Varanasi.

8. Pandey, Anjana. **Studies on Adkin's catalyst- unsupported/supported.** BHU. Dr Ram Prasad, Department of Chemical Engineering and Technology, Banaras Hindu University, Varanasi and Dr R K Jha, Department of Chemical Engineering and Technology, Banaras Hindu University, Varanasi.

9. Saroch, Mamta. **Thermodynamics and phase stability in metallic systems.** BHU. Prof P Ramachandra Rao and Dr K S Dubey, Department of Material Science and Technology, Banaras Hindu University, Varanasi.

10. Sharma, Sanjay Kumar. **Numerical modelling of fractured and jointed rock mass.** BHU. Prof R Nath, Department of Mining Engineering, Banaras Hindu University, Varanasi.

11. Singamsetty, Hari Sankar. **Gallic acid production in bio reactor.** BHU. Dr S K Srivastava, Department of Biochemical Engineering, Banaras Hindu University, Varanasi.

12. Singh, Arun Kumar. **Thermodynamic properties of various mixtures.** BHU. Dr N S Garg, Department of Chemical Engineering and Technology, Banaras Hindu University, Varanasi and Dr A K Verma, Department of Chemical Engineering and Technology, Banaras Hindu University, Varanasi.

13. Singh, Awadhesh Kumar. **Bearing capacity and settlement**

analysis of shallow and deep foundation. BHU. Prof Virendra Singh, Department of Civil Engineering, Banaras Hindu University, Varanasi.

14. Singh, Kumar Samir. **Kinetic studies on methanol to gasoline.** BHU. Prof P C Singh, Department of Chemical Engineering and Technology, Banaras Hindu University, Varanasi.

15. Singh, Neelam. **Ferroelectric oxides with perovskite and tungsten bronze structures.** BHU. Dr D Pandey, Department of Material Science and Technology, Banaras Hindu University, Varanasi.

16. Singh, Prabhu Nath. **Microstructure and mechanical properties of high temperature alloys.** BHU. Prof Vakil Singh, Department of Metallurgical Engineering, Institute of Technology, Banaras Hindu University, Varanasi.

17. Singh, Rakesh Kumar. **Preventive control of electric energy system.** BHU. Prof G K Rao, Department of Electrical Engineering, Banaras Hindu University, Varanasi.

18. Singh, Vindhya Vasini Prasad. **Analysis of microwave windows for high power microwave tubes.** BHU. Dr A K Sinha, Central Electronics Engineering Research Institute, Pilani and Prof B N Basu, Department of Electronics Engineering, Banaras Hindu University, Varanasi.

19. Singh, Vinod Kumar. **Signature studies on sensors.** BHU. Prof S K Srivastava, Department of Electronics, Banaras Hindu University, Varanasi.

20. Sinha, Arun Kumar **Studies on some novel process and techniques for surface hardening.** BHU. Prof S N Upadhyay, Department of Chemical Engineering, Banaras Hindu University, Varanasi and Prof Y D Upadhyay, Department of Chemical Engineering, Banaras Hindu University, Varanasi.

21. Srinivas, N C Santhi. **Structure property correlations in metals and alloys.** BHU. Prof V V Kutumba Rao, Department of Metallurgical Engineering, Banaras Hindu University, Varanasi.

22. Srivastava, Sidhatri Kumar. **Fibre composite materials.** BHU. Dr A K Ray, Department of Biomedical Engineering, Banaras Hindu University, Varanasi and Dr V K Srivastava, Department of Biomedical Engineering, Banaras Hindu University, Varanasi.

23. Suwas, Satyam. **RF structures for microwave tubes.** BHU. Dr P K Jain, Department of Electronics Engineering, Banaras Hindu University, Varanasi and Dr B N Basu, Department of Electronics Engineering, Banaras Hindu University, Varanasi.

24. Thakur, Rajesh Kumar. **Self organising learning control and decision making in biomedical systems.** BHU. Dr R B Mishra, Department of Electrical Engineering, Banaras Hindu University, Varanasi.

25. Vajpayee, Manoj Kumar. **Studies on hydrodynamic and oxygen transfer characteristics of air-lift bubble column reactor.** BHU. Prof V B Mishra, Department of Civil Engineering, Banaras Hindu University, Varanasi and Prof S N Upadhyay, Department of Chemical Engineering, Banaras Hindu University, Varanasi.

26. Varma, Mata Prasad. **Influence of composition and process parameters on the properties of thermit welds.** BHU. Dr S N Chakravarty, Director, Research Designs and Standards Organisation, Lucknow and Prof P M Prasad, Department of Metallurgical Engineering, Banaras Hindu University, Varanasi.

BIOLOGICAL SCIENCES

Environmental Sciences

1. Pandey, Rabindra. **Studies on water pollution and pollution abatement.** BHU. Dr K C Pathak, Department of Applied Chemistry, Banaras Hindu University, Varanasi and Prof D C Rupainwar, Department of Applied Chemistry, Banaras Hindu University, Varanasi

2. Shrivastava, Anuj Kumar. **Studies on the pollution of water by lead and other heavy metals.** BHU. Prof D C Rupainwar, Department of Applied Chemistry, Banaras Hindu University, Varanasi and Dr Gur Prasad, Department of Applied Chemistry, Banaras Hindu University, Varanasi.

3. Singh, Rakesh Kumar. **Studies on the occurence and removal of some heavy metals in sludges and effluents with special reference to pollution of River Ganga.** BHU. Dr D C Rupainwar, Department of Applied Chemistry, Banaras Hindu University, Varanasi and Dr (Mrs) P Rupainwar, Department of Applied Chemistry, Banaras Hindu University, Varanasi.

4. Tiwari, Ruchi. **Refining of agricultural waste for increased enzymatic hydrolysis.** BHU. Dr V K Verma, Department of Applied Chemistry, Banaras Hindu University, Varanasi and Dr S Kundu, Department of Applied Chemistry, Banaras Hindu University, Varanasi.

Biochemistry

1. Dasgupta, Dalia. **Enzymatic studies of Kala azar.** BHU. Dr (Mrs) S Rathaur, Department of Biochemistry, Banaras Hindu University, Varanasi.

Biotechnology

1. Mishra, Bal Mukund. **Genetics of osmoregulation and nitrogen fixation in Azospirillum.** BHU. Dr A K Tripathi, Department of Biotechnology, Banaras Hindu University, Varanasi.

2. Prabhakar, Prakash. **Enzyme - enzyme interaction.** BHU. Dr A M Kayastha, School of Biotechnology, Banaras Hindu University, Varanasi and Prof O P Malhotra, School of Biotechnology, Banaras Hindu University, Varanasi.

3. Singh, Sujeet Kumar. **Molecular genetics of symbiotic nitrogen fixation in Rhizobium phaseoli.** BHU. Prof B D Singh, School of Biotechnology, Banaras Hindu University, Varanasi and Dr R K Singh, School of Biotechnology, Banaras Hindu University, Varanasi.

Botany

1. Akhilesh Kumar. **Role of mycorrhizae in plant disease control.** BHU. Dr R S Upadhyay, Department of Botany, Banaras Hindu University, Varanasi.

2. Bhupendra Kumar. **Ecology and genetics of phages infective on Rhizobium.** BHU. Dr A K Kashyap, Department of Botany, Banaras Hindu University, Varanasi and Dr Banshidhar, Department of Botany, Banaras Hindu University, Varanasi.

3. Chaturvedi, Ratnesh. **Enhanced UV-S effect on terrestrial and aquatic plants.** BHU. Dr D N Tiwari, Department of Botany, Banaras Hindu University, Varanasi and Dr Radhey Shyam, National Botanical Research Institute, Lucknow.

4. Goswami, Sita Ram. **Response of different levels of phosphatic fertilizers and their methods of applications on growth parameter, productivity and quality of soybean.** HS Gour. Dr R A Khan.

5. Khare, Divya. **Control of colletotrichus rot of Capsicum annum L by prosospathia drugs.** H S Gour.

6. Mishra, Sandhya. **Bendomon as medicated biological control of plant disease.** BHU. Dr R S Upadhyay, Department of Botany, Banaras Hindu University, Varanasi.

7. Prasad, Bipin Bihari. **Physiology and biochemistry of cyanobacteria.** BHU. Dr S N Tripathi, Department of Botany, Banaras Hindu University, Varanasi.

8. Rajak, Asharfi Lal. **Cyanobacterial metal binding removal.** BHU. Dr L C Rai, Department of Botany, Banaras Hindu University, Varanasi.

9. Saraf, R K. **Efficacy of herbicides for weed control in Kharif onion, Allium cepa L in Satpura Plateau of M P.** HS Gour. Dr D K Yadav and Dr J P Tiwari.

10. Sharma, Chakradhar. **Foliicolous fungi from the forest flora of M P with special reference to Deuteromycotina.** H S Gour. Dr K M Vyas, Prof and Head, Department of Botany, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

11. Shrivastava, Jaya. **Aflatoxin control through homoeopathic drugs.** H S Gour. Dr D C Atri, Reader, Department of Botany, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

12. Singh, Arvind Pratap. **Physiological and genetical studies of nitrogen-fixation in cyanobacteria.** BHU. Dr D N Tiwari, Department of Botany, Banaras Hindu University, Varanasi.

13. Singh, Manoj Kumar. **Ecological study on Ipomoea species**

growing in locality of Varanasi. BHU. Prof H R Sant, Department of Botany, Banaras Hindu University, Varanasi.

14. Singh, Rachna. **Studies on clonal propagation of some important plants by tissue and cell culture techniques.** H S Gour. Prof K M Vyas, Reader; Department of Botany, Banaras Hindu University, Varanasi.

15. Singh, Shubhraja. **Cytogenetical study of higher plants.** BHU. Dr B K Roy, Department of Botany, Banaras Hindu University, Varanasi.

16. Singhal, Anupama. **Geochemical studies in the vitality, viability and vigour of some seed type.** HS Gour. Dr S P Bajpai, Reader, Department of Botany, Dr Hari Singh Gour Vishwavidyalaya, Sagar and Dr A K Kandya, Reader, Department of Botany, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

17. Verma, Sunita. **Ecophysiological studies of Spirulina.** BHU. Prof H D Kumar, Department of Botany, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

18. Vishnu Prakash. **Ecological studies of Ranunculus species growing in locality of Varanasi.** BHU. Prof H R Sant, Department of Botany, Banaras Hindu University, Varanasi.

19. Yadav, Pratibha. **Evaluation of some higher plant products against causing dermatomycosis.** BHU. Dr N K Dubey, Department of Botany, Banaras Hindu University, Varanasi.

Zoology

1. Acharia, Kaberi. **Role of lipids in endocrine regulation of fish reproduction.** BHU. Prof T P Singh, Department of Zoology, Banaras Hindu University, Varanasi.

2. Agarwala, Suraj Prakash. **Biological control and self defensive mechanism of some insects of economic importance.** Delhi. Dr S S Sehgal, Department of Zoology, University of Delhi, Delhi.

3. Deepshikha. **Ecology and histochemistry of some digenetic trematodes.** BHU. Dr A K Mourya, Department of Zoology, Banaras Hindu University, Varanasi.

4. Harikrishnan, S. **Some aspects of fish reproduction.** BHU. Prof T P Singh, Department of Zoology, Banaras Hindu University, Varanasi.

5. Kapoor, Neera. **Evaluation of certain repellents for personal protection measures against mosquitoes.** Delhi. Dr S S Sehgal, Department of Zoology, University of Delhi, Delhi and Dr M A Ansari, Deputy Director, Malaria Research Center, Delhi.

6. Mukherjee, Shivani. **Androgen mediated alterations in chromatin structure and gene expression as a function of age.** BHU. Dr M K Thakur, Department of Zoology, Banaras Hindu University, Varanasi.

7. Parminder Kaur. **Periphytic community and water quality of river Yamuna.** Delhi. Dr N K Mehra, Department of Zoology, University of Delhi, Delhi.

8. Rao, Manjeet Kumar. **Nutritional and hormonal regulation of pregnancy and lactation in the rat.** Delhi. Dr P K Paul, Department of Zoology, University of Delhi, Delhi.

9. Ravi Kant. **Cholesterol absorption and transport in insects.** Delhi. Dr H C Agarwal, Department of Zoology, University of Delhi, Delhi and Dr Ravi Dhar, National Institute of Immunology, New Delhi.

10. Ray, Pritha. **Studies on heat shock response in Drosophila.** BHU. Prof S C Lakhotia, Department of Zoology, Banaras Hindu University, Varanasi.

11. Roy, Sourindra Mohan. **Role of pineal in endocrine regulation of fish reproduction.** BHU. Prof T P Singh, Department of Zoology, Banaras Hindu University, Varanasi.

12. Sagar, Surendra Kumar. **Biology and control of certain vectors of medical importance.** Delhi. Dr S S Sehgal, Department of Zoology, University of Delhi, Delhi.

13. Sajeev, T V. **Population genetics of Drosophila.** BHU. Prof B N Singh, Department of Zoology, Banaras Hindu University, Varanasi.

14. Sarkar, Malancha. **Role of tRNA in the reproductive cycle of a freshwater teleost.** BHU. Dr M Vinayak, Department of Zoology, Banaras Hindu University, Varanasi.

15. Sarkar, Ratna. **Physiology of pineal active substance(s): Hormone(s)-melatonin, serotonin and peptide(s), protein(s) in reproduction of Indian palm squirrel, F. pennanti.** BHU. Dr C Haldar, Department of Zoology, Banaras Hindu University, Varanasi.

16. Singh, Ajaya Kumar. **Certain aspects of developmental studies in insects.** BHU. Dr D Kumar, Department of Zoology, Banaras Hindu University, Varanasi.

17. Srivastava, Tulika. **Behaviour genetics of Drosophila.** BHU. Prof B N Singh, Department of Zoology, Banaras Hindu University, Varanasi.

18. Therakan, Binu. **Structural and functional studies on role of the olfactory system in neuro endocrine regulation of reproduction in cat fish.** BHU. Dr K P Joy, Department of Zoology, Banaras Hindu University, Varanasi and Dr K S Rao, Department of Zoology, Banaras Hindu University, Varanasi.

19. Upadhyay, Rekha. **Role of sex steroids GnRH in regulation of GTH secretion in Indian fresh water fuvel fishes.** BHU. Prof T P Singh, Department of Zoology, Banaras Hindu University, Varanasi.

20. Venugopal, K J. **Some aspects of studies on reproduction in birds.** BHU. Dr D Kumar, Department of Zoology, Banaras Hindu University, Varanasi.

Medical Sciences

1. Bhoopendra Singh. **Analytical study of drug abuse and poisoning in Varanasi.** BHU. Dr C B Tripathi,Department of Forensic Medicine, Banaras Hindu University, Varanasi and Dr B L Pandey, Department of Forensic Medicine, Banaras Hindu University, Varanasi.

2. Karunakar, Sukuru. **Targetting of thermally stabilized anti cancer drug loaded albumin microspheres to lung.** BHU Dr J Singh, Department of Pharmaceutics, Banaras Hindu University, Varanasi.

3. Madhu Sudhan, Shaik. **Tragetting of chemically stabilized anticancer drug loaded microspheres to lung.** BHU. Dr J Singh, Department of Pharmaceutics, Banaras Hindu University, Varanasi.

4. Pandey, Govind Shanker. **Synthesis and biological activities of dithiazoles and benzothiazoles.** BHU. Dr S N Pandeya, Department of Pharmaceutics, Banaras Hindu University, Varanasi.

5. Prabhakara Rao, Gonugunta. **Studies on rasa karpura.** BHU. Dr D Joshi, Department of Rasa Shastra, Banaras Hindu University, Varanasi.

6. Sarbadhikari, Suptendra Nath. **Electrophysiological signal analyser from the brain in animal model of endogenous depression.** BHU. Dr A K Roy, Department of Biomedical Engineering, Banaras Hindu University, Varanasi.

7. Sen, Prithviraj. **Central modulation of immune visfans.** BHU. Prof S K Bhattacharya, Department of Pharmacology, Banaras Hindu University, Varanasi.

8. Singh, Surendra Bahadur. **Role of malnutrition in infective diseases of bones and joints.** BHU. Dr S V Sharma, Department of Orthopaedics, Banaras Hindu University, Varanasi.

9. Singh, Surya Kumar. **Clinical and biochemical profile of young diabetics in North-East India.** BHU. Prof J K Agarwal, Department of Medicine, Banaras Hindu University, Varanasi.

10. Sujata. **Haemostasis with normal and abnormal pregnancies with special reference to hypertension, preclampsia and eclampsia.** BHU. Prof B Dube, Department of Pathology, Institute of Medical Science, Banaras Hindu University, Varanasi.

11. Tandon, Ravi. **Interaction of cancer chemotherapy with host response: Tumour markers, immune response trace elements and endocrine responses.** BHU. Prof V P Singh; Prof J K Agrawal; Dr Usha Singh, Department of Medicine, Institute of Medical Science, Banaras Hindu University, Varanasi and Prof H S Shukla, Department of Surgery, Institute of Medical Science, Banaras Hindu University, Varanasi.

12. Verma, Archana. **Regulation of T-helper 2 cells: Role of membrane associated molecules(s) of antigen presenting cell.** Panjab. Dr G C Mishra, Institute of Microbial Technology, Sector 39-A, Chandigarh.

THESES OF THE MONTH

A list of Doctoral Theses accepted by Indian Universities.

PHYSICAL SCIENCES

Mathematics

1. Bhagwat, Purnima. **Some problems on Fourier analysis.** HS Gour. Prof S K Shrivastava, Head, Department of Mathematics, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

2. Felix, S M. **Studies on bitopological spaces.** Madurai.

3. Ghosh, Banamali. **On some typical problems of fuzzy topology.** Calcutta.

4. Ghosh, Naba Kumar. **On some problems of unsteady motion in the theory of water waves at an inertial surface.** Calcutta.

5. Maity, Asha Rani. **Studies on certain mappings on fixed point theorems.** Ravishankar. Dr B L Gupta, Prof, Department of Mathematics, Government Engineering College, Raipur.

6. Rajeswari, V. **Numerical studies of unsteady boundary layer flow problems.** IISc.

7. Verma, Suman Kumar. **Solutions of some mixed boundary value problems by integral equation techniques.** Delhi.

Statistics

1. Bhimani, G C. **Construction and analysis of partially balanced incomplete block designs.** Saurashtra. Dr D K Ghosh.

Physics

1. Binay Kumar. **Polytypism of vapour grown dendritic single crystals of both undoped and doped cadmium iodide.** Delhi.

2. Dey, Basabadutta. **Theoretical investigations in nuclear optical model with special reference to antiproton nucleus and nucleus-nucleus scatterings.** NEHU. Dr C S Shastry, Department of Physics, North Eastern Hill University, Shillong.

3. Malik, Mamta. **Space and time dependent study on fast neutrons and tritium breeding in Li and Li O.** Delhi.

4. Mangamma, G. **Pulsed nuclear magnetic resonance investigations of certain protonic conductors.** IISc.

5. Meera, B N. **MAS-NMR and Raman studies in binary and ternary borate glasses.** IISc.

6. Padmaja, N. **Small molecules of biological and chemical interest: X-ray crystallographic studies and space group frequency analysis.** IISc.

7. Rajeswari, M. **An experimental study of the specific heat at the glass transition during cooling.** IISc.

8. Sengupta, Surajit. **Studies in the density functional theory of freezing: Relative stability of F C C and B C C structures, colloids, interfaces and the flux lattice in high Tc superconductors.** IISc.

9. Sharma, Sandeep Kumar . **Photoconductivity of some semiconducting compounds.** Ravishankar. Dr Shashi Bhushan, Reader, School of Studies in Physics, Ravishankar University, Raipur.

10. Vijayashree, M N. **Electrical conductivity of the complexes obtained from 1,4- diaminoanthraquinone and of the pyrolytic carbon films.** IISc.

Chemistry

1. Agrawal, Rajesh Shanker. **Electro-analytical studies of metal ions with nitrogenous coordination compounds: A polarographic study.** Devi Ahilya. Dr Ashok Kumar, Department of Chemistry, Devi Ahilya Vishwavidyalaya, Indore.

2. Balaramachandran, V. **Structure of electrical double layer at mercury solution interfaces in the presence of adsorbed organic molecules.** Madurai.

3. Bhargava, Rashmi. **Kinetic studies on some enzyme model reactions.** Durgawati.

4. Chakrabarti, Syamal. **Fluorenones and other secondary metabolites of some orchids and synthesis of polynuclear hydrocarbons.** Calcutta.

5. Chandrachuda Shastry, N S. **Biochemical profiles in paediatric disorders in Indian children.** Bangalore. Dr D G Benakappa, 788/34 'A' Cross 9th Main, 4th Block, Jayanagar, Bangalore and Dr B S Sridhara Rama Rao, Prof and Head, Department of Neuro Chemistry, National Institute of Mental Health and Neuro Sciences, Bangalore.

6. Jadhav, Sunil. **Kinetic and mechanistic studies in the oxidation of some dicarboxylic acids by potassium permanganate in acidic media.** Vikram. Dr R S Verma.

7. Jagannadha Swamy, Salagramma Venkata. **Analytical applications of periodate in redoxmetry.** Andhra.

8. Jain, Mamta. **Spectrophotometric determination of metals at trace level by indirect method: Solid liquid separation after adsorption on metal complexes on microcrystalline naphthalene.** Devi Ahilya. Dr Ashok Kumar, Department of Chemistry, Devi Ahilya Vishwavidyalaya, Indore.

9. Jayalekshmy. **Studies on the development of flavour in coconut and oilpalm kernel on heating.** Kerala. Dr A G Mathew, General Manager, Kissan Products Ltd, Old Madras Road, Bangalore.

10. Lanjewar, Ratnakar Balkrishna. **Mossbauer infrared and magnetic studies of iron complexes.** Nagpur. Dr A N Garg, Department of Chemistry, Nagpur University, Nagpur.

11. Mahakalkar, Anjali Sunil. **Physicochemical studies on dye-surfactant reaction and its complexation with some rare metal-ions.** Nagpur. Dr K N Munshi, Department of Chemistry, Nagpur University, Nagpur.

12. Malik Jamaluddin. **Chemical and spectral studies of steroidal compounds.** AMU. Dr Shafiullah, Prof, Department of Chemistry, Aligarh Muslim University, Aligarh.

13. Modi, Haresh Mahipatlal. **Studies on synthetic silica and**

aluminosilicates. Bhavnagar. Dr V P Pandya, Scientist 'F', Central Salt and Marine Chemicals Research Institute, Bhavnagar.

14. Nandita Devi, Thokchom. **Stereochemical investigations of some sterically crowded molecules.** Manipur. Dr M Dhaneshwar Singh, Assoc Prof, Department of Chemistry, Manipur University, Imphal.

15. Patel, L B. **Studies on drug potentials.** Saurashtra. Dr A R Parikh, Prof and Head, Department of Chemistry, Saurashtra University, Rajkot.

16. Pius, K. **Theoretical studies of novel electronic effects in radicals and radical ions.** IISc.

17. Poornima Devi, C S. **Theoretical studies of barrierless and very low barrier chemical reactions in solution.** IISc.

18. Prabakar, S. **Magic-angle-spinning NMR spectroscopic investigations of gels and glasses of silicates, phosphates, borates and related systems.** IISc.

19. Ramaswamy, Y S. **Synthesis and spectral studies of organoruthenium, rhodium and irridium complexes with N-heterocycles.** Bangalore. Dr G K Narayana Reddy, Department of Chemistry, Central College, Bangalore and Dr N M Nanje Gowda, Department of Chemistry, Central College, Bangalore.

20. Sandhu, Seema. **Solvation studies of electrolytes in dimethylformamide + methanol mixtures.** Panjab.

21. Saraswathi, M. **Mass spectral study of stereochemical effects.** Osmania.

22. Selvaraj, M. **Conductive polymers: Semiconducting polymers and modified polymers.** Madras.

23. Shah, Sangeeta Jayendrabhai. **Metal organic compounds: Some spectroscopic studies.** Bhavnagar. Dr S N Misra, Prof and Head, Department of Chemistry, Bhavnagar University, Bhavnagar.

24. Sharma,Radha Krishna. **Nitrogen uptake by wheat as influenced by sources of nitrogen and Zn levels in soils of Chambal Command area of M P.** Jiwaji. Dr S B Saxena, Prof and Head, Department of Applied Chemistry, Madhav Institute of Technology and Science,Gwalior and Dr D Singh, Dean (Retd), College of Agriculture, Gwalior.

25. Sinha, Aseem. **Spectroscopic and thermodynamic studies of micellar interaction with organic solutes and studies on the effect of concentration and temperature on cationic transference number of CuSO at constant pH.** NEHU. Dr S N Bhat, Department of Chemistry, North Eastern Hill University, Shillong.

26. Sugumaran, N. **Study of corrosion kinetics by an improved galvanostatic transient analysis.** IISc.

27. Sundaram, Vedaraman. **Studies on the preparation and characterisation of silver ion based superionic conductors.** Madurai.

28. Syed Samsuz Zaman. **Chemical transformations of natural products with special reference to new synthetic methods.** Dibrugarh. Dr R P Sharma, Asstt Director, Regional Research Laboratory, Jorhat and Dr Purabi Devi, Reader, Department of Chemistry, Dibrugarh University, Dibrugarh.

29. Talwar, Preeti. **Synthetic studies on compounds of potential biological importance..** Jiwaji. Dr V S Jolly.

30. Tamilselvan, S. **Investigations on alkaline nickel cadmium battery.** Madurai.

31. Thanulingam, T Lakshmana. **Studies on structure reactivity correlation.** Madurai.

Earth Sciences

1. Kamalakaram, Saripalli. **Recent foraminifera of the Goguleru Creek (lagoon) East Coast of India.** Andhra.

2. Rama Krishna Raju, Penmethsa Appala. **Hydrochemical study of shallow ground water environment and prediction of water quality of coastal tracts of West Godavari District, Andhra Pradesh.** Andhra.

3. Sangoormath, Prabhakar S. **A study of the geology and gold mineralisation at Buddini area of Hutti-Maski greenstone belt, Raichur District, Karnataka, India, with special reference to exploration aspects.** Gulbarga.

4. Sant, Dhananjay Anant. **Structure and geomorphic evaluation of the lower Narmada Valley in Western India.** Baroda.

5. Thillaigovindarajan, S. **Some aspects of controls of groundwater in hard rock domains of Cheyyar river basin, Tamilnadu.** Madras.

6. Venkataramana, Ch. **The studies on geology and origin of laterites occurring in and around Zaheerabad, Medak District, A P.** Osmania.

Engineering & Technology.

1. Kar, Subrat. **Self-routing in some novel photonic switching architectures.** IISc.

2. Krishna, M G. **Ion assisted deposition of oxide thin films.** IISc.

3. Lakshmisha, K N. **Computational studies on flammability limits of premixed gases.** IISc.

4. Moshkenani, Mohsen Sadighi. **Knowledge teaching: An alternative strategy for knowlege-base development.** IISc.

5. Naganarayana, B P. **Consistency and correctness principles in quadratic displacement type finite elements.** IISc.

6. Natarajan, K A. **Investigations on electro-, bio-, and surface-chemical phenomena relevant to minerals processing.** D Sc. IISc.

7. Ramana Prasad, B V. **Velocity, shear and friction factor studies in rough rectangular open channels for supercritical flows.** IISc.

8. Raviprasad, K. **Microstructural evolution during ordering and magnetic properties of rapidly solidified Fe-Si alloys.** IISc.

9. Ripudaman Singh. **Thermomechanical generalisation of partial contact in pin joints.** IISc.

10. Shamshi Maher Alam. **To design and configure intelligent telemetered seismic networks and to workout design strategy of a "National Seismic Data Centre" for Indian subcontinent.** Panjab.

11. Shashiprakash, S G. **Analysis of behaviour of cement composites particulate and non-particulate considerations.** IISc.

12. Venkatarama Reddy, B V. **Studies on static soil compaction and compacted soil-cement blocks for walls.** IISc.

Government of India
MINISTRY OF WELFARE

CENTRAL SCHEME OF PASSAGE GRANTS AND NATIONAL OVERSEAS SCHOLARSHIPS FOR HIGHER STUDIES ABROAD FOR SCHEDULED CASTES AND SCHEDULED TRIBES ETC STUDENTS FOR THE YEAR 1991-92 & 1992-93

PASSAGE GRANTS

Applications in the prescribed form are invited for the award of 18(eighteen)passage grants as indicated below:-

(i)Scheduled Castes : 8 (ii) Scheduled Tribes: 8 (iii) Denotified, Nomadic and Semi-Nomadic Tribes: 2.

DETAILED INFORMATION: The Government of India awards passage grants to candidates belonging to Scheduled Castes, Scheduled Tribes, Denotified Nomadic and Semi Nomadic Tribes 2. Only those candidates, who are in receipt of a merit scholarship for Post Graduate Studies, Research or Training abroad from a foreign Government/Organisation or under any other scheme, where the costs of passage is not provided, will be eligible to apply 3. Candidates should possess a Master's or an equivalent degree in case of arts or science subjects and a Bachelor's Degree in case of Engineering, Technical and Medical subjects. 4. Candidates who are in receipt of any aid from any other sources for passage will not be eligible. 5. The income limit of parents/ guardians or applicant himself is fixed at Rs.5000/- p.m. for eligibility of the award. 6. Candidates who have already reached a foreign country will not be considered for the Grant of passage to the country of study. In exceptional cases they may be considered for return passage provided the funds are available. They should make a formal request through the Indian Mission three months before the date of departure and submit with the application form the following documents:- (i) a certificate from the University/Institution that he has successfully completed the course of study. (ii) a certificate to the office that he is not in receipt of return passage cost from any source 7. Selected candidates will be entitled to return passage grant also. They will, however, be required to submit a formal application through the Indian Mission concerned three months before the date of departure supported by two documents mentioned in para 6 above. 8. In all cases, only air passage will be booked by cheap economy class and by the shortest route. If a candidate desires to travel in a class of accommodation higher than that which is admissible to the difference in fare will have to be borne by him and paid to Air India 9. Incomplete applications will not be considered. 10. Procedure for obtaining application forms.

Application forms will be supplied by post or in person. The last date for supply and receipt of duly completed application form is **15th May, 1992.** For detailed terms and conditions, application forms etc. please write enclosing a self-addressed envelope of the size 28x 12 cms to : **The Deputy Secretary, Ministry of Welfare, Scholarship Cell, Room No. 240, 'A' Wing, Shastri Bhawan, New Delhi -110001.** Envelope containing the request for supply of application form should be superscribed with the words "REQUEST FOR APPLICATION FORM FOR PASSAGE GRANT".

An application for a passage grant comprises: (i) One copy of the application in the Prescribed Form; (ii) One copy of the recently taken passport size photograph; (iii) One attested copy each of the certificates, Diploma, Degree etc. in respect of all examinations passed (iv) A Statement indicating details of the award and the manner in which it has been awarded; (v) One attested copy of the letter of award; (vi) A certificate of caste/tribe in the prescribed form duly signed by the District Collector or Deputy Commissioner(applicable in the case of Scheduled Castes, Scheduled Tribes and Denotified, Nomadic and Semi-Nomadic Tribes, (viii) A certificate of income of parents/guardians or applicant himself in the prescribed form.

IL NATIONAL OVERSEAS SCHOLARSHIP

FOR HIGHER STUDIES ABROAD FOR SCHEDULED CASTES AND SCHEDULED TRIBES ETC STUDENTS FOR THE YEAR 1991-92 & 1992-93.

Application in the prescribed form are invited for the award of 60 scholarships for the year 1991-92 and 1992-93 as indicated below:-(i) Scheduled Castes : 34.(ii) Scheduled Tribes: 18 (iii) Denotified, Nomadic and Semi Nomadic Tribes:2 (iv) Converts to other religions who or whose forefathers were at any time members of a caste specified in the Schedules to the Constitution (Scheduled Caste) Orders. (v) Candidates whose parents are landless agricultural labourers and traditional artisans of communities other than those listed at (i) to (iv) above : 2. Total : 60.

SUBJECTS/COURSES OF STUDY

The scholarships will be awarded for Graduate, Post Graduate and research in the subject for which suitable facilities are not available in India. Preference, will however, be given to the candidates who propose to go in for higher studies in (i) Engineering (ii) Technology and (iii) Science. NOTE: No scholarship will be available for (i) Medical studies (ii) Agricultural and allied subjects and veterinary sciences (iii) Subjects/field connected with Indian studies.

SCHOLARSHIPS WILL BE AVAILABLE FOR : (a) Bachelor's Degree in Printing Technology (b) Master's Degree in Naval Architecture/Off-shore structures (ii) Automation and Robotics (iii) Reliability Engineering (iv) Laser Technology and (v) Paper Technology (c) Post Graduate studies leading to Ph.D. and (d) Post Doctoral Research/Specialised Training.

MINIMUM QUALIFICATIONS :

	Course		For Scheduled Castes	For Scheduled Tribes
a)	Bachelor's Degree in Printing Technology	(i)	1st Class Diploma/ Licentiate in Printing Technology.	(i) IInd Class Diploma/Licentiate in Printing Technology.
		(ii)	Two years' working experience after completion of Diploma/Licentiate.	(ii)Two years' working experience after completion of Diploma/ Licentiate.
(b) Master's Degree in				
(i)	Naval Architecture/ Off Shore Structures	(i)	1st Class Bechelor's Degree in Naval Architecture/Civil Engineering.	(i) IInd Class Bachelor's Degree in Naval Architecture/Civil Engineering.
		(ii)	Two years' working experience after completion of Degree.	(ii)Two years' working experience after completion of Degree.
(ii)	Automation & Robotics	(i)	1st Class B.E./ B.Tech. in Mechanical/Elect/ Electronics/Computer Engg. with control system as elective subject.	(i) IInd Class B.E./ B.Tech. in Mechanical/ Elect/ Electronics/ Computer Engg. with control system as elective subject.
		(ii)	Two years' working experience after completion of Degree.	(ii)Two years' working experience after completion of Degree.

(iii)	Reliability Engineering	(i)	1st class B.E./ B.Tech Degree in any branch of Engineering with Quality Control Operational Research/Statistics as elective subject	(i)	IInd Class B.E/ B.Tech Degree in any branch of Engineering with Quality Control Operational Research/Statistics as elective subject
		(ii)	Two years' working experience after completion of Degree	(ii)	Two years' working experience after completion of Degree
(iv)	Laser Technology	(i)	1st Class M.Sc. Degree in Physics/ B.E. or B.Tech. Degree in Mechanical/Electrical/Electronics with Laser/ Opto-electronics as elective subject	(i)	IInd Class M.Sc. Degree in Physics/ B.E. or B.Tech. Degree in Mechanical/Electrical/ Electronics with laser/Opto-electronics as elective subject
		(ii)	Two years' working experience after completion of Degree	(ii)	Two years' working experience after completion of Degree
(v)	Paper Technology	(i)	1st Class Bachelor's Degree in Pulp and Paper Technology or 1st class Post B.Sc. Diploma in Pulp and Paper Technology	(i)	IInd Class Bachelor's Degree in Pulp and Paper Technology or IInd class Post B.Sc. Diploma in Pulp and paper Technology
		(ii)	Two years' working experience after obtaining Degree/Diploma	(ii)	Two years' working experience after obtaining Degree/Diploma
(c)	Post Graduate studies leading to Ph.D	(i)	Master's Degree in the subject of study with 1st Class	(i)	Master's Degree in the subject of study with IInd Class.
		(ii)	Two years' research or training experience in the subject of study OR M.Phil Degree in the subject of study	(ii)	Two years' research or training experience in the subject of study OR M.Phil Degree in the subject of study
(d)	Post Doctoral Research/Specialised Training	(i)	Master's Degree in the subject of study with 1st class.	(i)	Master's Degree in the subject of study with IInd class.
		(ii)	Doctorate in the subject of study	(ii)	Doctorate in the subject of study
		(iii)	Five years' experience either in research or teaching or in related industries.	(iii	Five years' experience either in research or teaching or in related industries.

TE: Employed candidates must apply through proper channel and should also ensure that they are eligible for study leave as per the rules of the employer.

AGE: AS ON 31.3.92. Note more than 35 years. This is relaxable upto 3 years at the discretion of the Selection Committee in the case of candidate otherwise well qualified.

INCOME CRITERIA: The income limit of Parents/Guardians or applicant himself is fixed at Rs. 5000/- p.m. for eligibility of this award. The final decision in regard to the country of choice will lie with the Ministry of Welfare.

GENERAL CONDITIONS (i) Only one child of the same parents/guardians will be entitled to receive scholarship (ii) These scholarships carry with them no guarantee of subsequent employment of the scholars on return to this country after completion of their studies abroad. The selected scholars are, however, required to remain in India for at least five years following the completion of their studies. (iii) The following conditions should, however, generally be satisfied by those selected candidates who are Central Government servants in temporary employment for the grant of leave terms under the scheme. (a) There should be a reasonable chance of their remaining in service for a minimum period of 3 years after the conclusion of training/studies and they should be required to give an undertaking to serve the Government for a like period. (b) They should have completed a minimum period of five years of service.

(iv) BOND: The selected scholars will be required to execute a bond with one or more sureties undertaking to pay, in case of Government employee proceeding on Study Leave or extraordinary leave for prolonged periods in a relaxation of the rules for the purpose of study and who resign or retire from service without returning to duty after the period of study or at any time within the stipulated period after their return to duty, a total sum of Rs. 20,000/- (or double the actual amount spent in connection with his studies, leave salary, study allowance, cost of fees, travelling allowance and other expenses which will be paid to Government employee during the period of such leave or otherwise incurred on him, whichever is greater) and the actual amount if any, of the cost incurred by other agencies e.g. Foreign Governments, Foundations, Trusts etc. in connection with the course of study, together with interest thereon; and in case of others, a total sum of Rs. 20,000/-(or the actual amount spent in connection with his studies, whichever is greater) the decision of the Secretary, Ministry of Welfare, will be final. In case the payment is made in the United Kingdom or the United States of Amercia, etc. the equivalent of the said sum in the currency of that country at the official rate of exchange between that country and India, together with interest thereon calculated at such rate as may be determined by the Government, from the date of demand, if the conditions of the bond and scholarships are violated.

VALUE OF SCHOLARSHIP: The rates of scholarship etc. will be as follows, subject to such modifications as the Government may decide from time to time.

(a) **Maintenance allowance:** (i) US Dollars 7700 per annum for post Doctoral Research/Training, (ii) US Dollars 6600 per annum for Post Graduate Studies leading to Ph.D. and Master's Degree also. (iii) US Dollars 5940 per annum for Bachelor's Degree. (b) Contingency allowance on books, essential apparatus, typing and binding of thesis and study tour (second class in UK and Coach Class in USA) actual cost subject to a maximum of US Dollars 385 per annum. (c) Equipment allowance of Rs. 1100/- A sum upto $15 or its equivalent in Indian or other currency (as permitted by R.B.I.) to cover incidental journey expense each way. (d) Poll tax US$150.

PROCEDURE FOR OBTAINING APPLICATION FORMS AND LAST DATE FOR SUBMISSION :

Application forms will be supplied by post or in person only upto **15.5.92.** The last date for supply of application and receipt of duly completed application form is **15.5.92.** The application forms received incomplete and those received after **15.5.1992** will be summarily rejected. The candidates are requested to obtain the forms by post or in person. For detailed terms and conditions, application etc. please write alongwith a self- addressed unstamped envelope of the size 28 x 12 cms to :**THE DEPUTY SECRETARY, MINISTRY OF WELFARE, SCD DIVISION, SCHOLARSHIP CELL, ROOM NO. 240, 'A' Wing Shastri Bhawan, New Delhi - 110001.** Envelope containing the request of supply of application forms should be superscribed with the words:

"REQUEST FOR APPLICATION FORM FOR NATIONAL OVERSEAS SCHOLARSHIP"

Davp 92/19

CLASSIFIED ADVERTISEMENTS

SANJIVANI EDUCATION SOCIETY'S
COLLEGE OF ENGINEERING, KOPARGAON-423603

WANTED

Applications are invited for the following posts

Sr.	Department	Category				Total No. of Posts
		Open	S.C.	S.T.	D.T.N.T.	
1)	**CIVIL ENGINEERING**					
	a) Professor	1	-	1	-	02
	b) Asstt.Professor	4	1	-	-	05
	c) Lecturer	7	3	1	-	11
2)	**ELECTRONIC ENGINEERING**					
	a) Professor	2	1	-	-	03
	b) Asstt. Professor	4	1	1	-	06
	c) Lecturer	5	2	2	1	10
3)	**COMPUTER ENGINEERING**					
	a) Professor	1	-	-	-	01
	b) Asstt. Professor	2	-	-	1	03
	c) Lecturer	2	1	1	1	05
4)	**MECHANICAL ENGINEERING**					
	a) Professor	1	1	-	1	03
	b) Asstt. Professor	5	1	1	-	07
	c) Lecturer	8	1	1	1	11
5)	**MATHEMATICS**					
	a) Asstt. Professor	1	-	-	-	01
	b) Lecturer	2	-	1	-	03
6)	**APPLIED SCIENCE**					
	a) Lecturer	-	-	2 (Phy-1, Chem-1)	-	02
7)	**GEOLOGY**					
	a) Lecturer	-	-	-	1	01
8)	**WORK SHOP**					
	a) Workshop Superintendent	-	-	1	-	01
9)	**LIBRARIAN**	1	-	-	-	01
10)	**ELECTRICAL ENGINEERING**					
	a) Lecturer	3	1	-	-	04
11)	**TRAINING & PLACEMENT OFFICER**	1	-	-	-	01

1) **Qualification:-** As per Pune University/AICTE rules.
2) If suitable backward class candidates are not available for reserved posts, the candidates from open category will be considered for one academic year appointment.
3) The backward class candidates should apply with due certificates of verification of caste and must send a copy of their application to Deputy Registrar, Reservation Cell, University of Poona, Pune 411007.
4) Pay scales and allowances as per university/AICTE/Govt. Maharashtra rules.

The applications in candidates' own handwriting, for the above posts with candidates' full biodata copies of statement of marks, experience certificates etc. should reach the Principal on or before **30th May, 1992.**

H.K. ABHAYANKAR
PRINCIPAL
C.O.E. KOPARGAON

SHRI G.V. NAGARE
CHAIRMAN
SES'S EDUCATION COMMITTEE

HON. SHRI S.G. KOLHE
CHAIRMAN
SANJIVANI EDUCATION SOCIETY

BHARATHIDASAN UNIVERSITY

TIRUCHIRAPALLI - 620024

Advertisement No.6301/B1/92
Dated 20-4-1992

Applications are invited for the post of Controller of Examinations, Bharathidasan University, Tiruchirapalli, in the scale of pay of Rs.4500-150-5700-200-7300 with usual allowances as per rules. The qualifications prescribed are as follows: **Essential:** A first or second class Postgraduate degree in any subject with a consistently good academic record and a Ph.D. degree with not less than 10 years of teaching and/or research experience at Collegiate level, out of which, not less than 3 years should be in the cadre not below that of a Reader/Lecturer (Selection Grade); **Desirable:** 3 years of experience in academic administration. The term of appointment will be initially for a period of three years.

Application form and other details can be had from the Registrar, Bharathidasan University, Tiruchirapalli, on requisition accompanied by a self-addressed envelope (size - 25 cm. x 10 cm.) stamped to the value of Rs.3.00 (Rupees three only).

The last date for receipt of filled-in application is **27.5.1992.**

Prof T.S. Shanmuga Sundaram
REGISTRAR

TITUS II TEACHERS COLLEGE, TIRUVALLA

WANTED :- Lecturer- in – English
(Open quota)

QUALIFICATION:

A) A I or II class Master's Degree in the subject with not less than 55% marks.

b) An M.Ed. Degree with I or II class, with not less than 55% marks with specialisation in the methods of teaching English at the B.Ed. or M.Ed. level

c) A pass in the eligibility test conducted by the UGC/CSIR. (The candidates who have already been awarded Ph.D/M.Phil Degree and all candidates who will be awarded Ph.D. Degree up to December 1992 will stand exempted).

Application Form can be had from the College Office on payment of Rs.50/-.

Apply within one month from the date of publication of the notification.

LECTURER-IN-CHARGE

BISHOP KURIALACHERRY COLLEGE FOR WOMEN

Amalagiri P.O.
Kottayam 686 036, Kerala

WANTED

Lecturers (Ladies only)

in History	Leave vacancy	Open merit
in Zoology	Leave vacancy	Open merit

in Physical Education	Substantive vacancy	Open merit

Qualifications :

I or II class Master's Degree in the concerned subjects with not less than 55% marks and a pass in the U.G.C. eligibility test.

Apply within one month from the date of this notification. Application can be had from the college office on payment of Rs.60/-.

The post is subject to sanction by the Mahatma Gandhi University, Kottayam, and review under the U.G.C. Scheme.

PRINCIPAL

Kuriakosa Elias College

Mannanam-686561 (Kerala)

WANTED

Lecturers in Malayalam and Hindi–Leave vacancies (open/community quota). The posts are subject to sanction by Mahatma Gandhi University, Kottayam and review under the UGC Scheme. **Qualification:** Ist or 2nd class Master's Degree in the concerned subject with not less than 55% of marks and a pass in the UGC eligibility test. **Age:** According to Government service and University regulations. Apply to the Principal within one month from the date of publication of this notification. Application form and other details can be had from the college office on payment of Rs. 50/- in person or Rs. 60/- by post.

PRINCIPAL

BIHAR UNIVERSITY

MUZAFFARPUR

Applications are invited for the following research positions in a CSIR sanctioned scheme entitled "Theoretical Investigations of Various Collision Processes Involving Atoms/Irons and Charged Particles" under Dr. Bishwa Nath Roy, Professor of Physics, Bihar University, Muzaffarpur :-

Research Associate/Senior Research Fellow/Junior Research Fellow (Number of positions-Two). Appointment can be made in any category depending upon the qualifications of the candidates selected.

JRF : NET/GATE qualified candidate with minimum of 55% marks at M.Sc. or equivalent examination.

SRF : At least two years of acceptable research experience in the area of theoretical Atomic Collision Physics with minimum of 55% at M.Sc. or equivalent examination.

RA : Ph. D. degree in the area of theoretical Atomic Collision Physics with minimum of 55% marks at M.Sc. or equivalent examinations.

Emoluments will be as per CSIR rules. The upper age limit for JRF, SRF, and RA is 28, 32 and 35 years respectively on the date of application. A small relaxation in age limit may be considered in the case of applicants who are suitably qualified and experienced, on the recommendations of the Selection Committee. The age limit is relaxable upto five years in the case of SC/ST, women and physically handicapped candidates. Applications giving personal details e.g., name and address, date of birth, father's name, full educational qualifications along with list of publications and attested copies of marksheets, certificates etc. must reach the undersigned on or beofre **30th May, 1992.** Candidates called for interview will have to appear at their own cost.

M. Jha
Development Officer

OSMANIA UNIVERSITY

HYDERABAD

Advertisement No.4/92, dated 18th April, 1992

Applications in the prescribed form together with the registration fee of Rs.10/- payable through I.P.O/Demand Draft only (M.O. is not acceptable) drawn in favour of the Registrar, Osmania University are invited for the following posts in Training and Orientation Centre, N.S.S. of the University so as to reach the undersigned in person or by post on or before **18th May, 1992.**

1. Training Co-ordinator	... One
2. Lecturer-cum-Community Organiser	... One

QUALIFICATION

1. Training Co-ordinator

i. Good academic record with Doctoral Degree or equivalent published work in the concerned subject. Evidence of being actively engaged in research;

ii. About five years experience as a Trainer in Youth Work/Community Work and must have basic skills for imparting training to the NSS Functionaries.

2. Lecturer-cum-Community Organiser

i. Good academic record with at least 55% marks or an equivalent grade at Master's Degree level in the relevant subject from an Indian University or an equivalent degree from a foreign University;

ii. About (2) years experience in organising NSS/other Youth Programmes, publications and research experience as Trainer.

PAY SCALE

1. Training Co-ordinator ..... Rs. 3700-5700.
2. Lecturer-cum-Community Organiser Rs.2200-4000

AGE

1. Training Co-ordinator ... Note more than 50 years.
2. Lecturer-cum-Community ..... Note more than 40 years.

NOTE Posts are temporary for a period of Three years and extendable for one more year.

Applications can be had from the Director, Department of University Press & Publications, Osmania University, Hyderabad - 570007 on payment of Rs.10/- in person or by post by enclosing an I.P.O./D.D. and a self-addressed stamped envelope of 14.5 x 26.5 cms.

REGISTRAR

SAHA INSTITUTE OF NUCLEAR PHYSICS

Sector-I, Block 'AF', Bidhannagar

Calcutta 700064

40th Post M.Sc. Associateship Course in Physics & Bioscience (1992-93 Session)

Applications are invited for admission to the one-year Post M.Sc. Associateship Course of the Saha Institute of Nuclear Physics in two streams : (1) Physics and (2) Bioscience.

Eligibility

(a) Physics : Master's degree in Physics. Candidates with Master's degree in Applied Mathesmatics/Engineering Sciences with good background in Physics may also apply.

(b) Bioscience : (i) Master's degree in Physics with specialisation in Biophysics/Crystallography. Candidates having specialisation in other areas of physics with strong motivation in Bioscience may also apply.

or

(ii) Master's degree in Chemistry with specialisation in Physical Chemistry/Biochemistry.

or

(iii) Master's degree in Biophysics/Molecular Biology/Crystallography/Biochemistry (with Mathematics and Physics at the B.Sc. level)

Candidates currently appearing in their final examination may also apply. However the candidates selected for the course must have their M.Sc. examinations completed before the commencement of the course.

Admission Test

Admission will be on the basis of academic records and performance in the admission test consisting of a written examination and interview which will be held in the month of July/August, 1992. The session is to commence in August/September, 1992.

Travelling Allowance

Candidates called for the admission test will be reimbursed return second-class Railway fare from their normal place of residence and will be paid DA for one day only as per the rules of the Institute.

Scholarship and Hostel Accommodation

Selected students will be paid a scholarship of Rs.2200/- per month for the duration of the course. Limited hostel accommodation will be available.

Future Prospects

Students successfully completing the Post-M.Sc. Course are likely to be absorbed as Research Fellows of the Institute depending on their academic performance and the availability of Fellowships.

How to apply

Application forms and prospectus will be available from 30th April, 1992.

Please write to :

The Establishment Officer
Saha Institute of Nuclear Physics,
Sector 1, Block - AF, Bidhannagar,
Calcutta - 700 064

with a self-addressed envelope (25 cms x 11 cms) by 18th May, 1992. **Do not affix any stamp on the envelope.** Completed application forms must reach the Establishment Officer, SINP by **June 8, 1992.**

TATA INSTITUTE OF SOCIAL SCIENCES
(A Deemed University)

Post Box No. 8313, Deonar, Bombay 400 088

Admission Announcement for 1992-93

POST M.A. CERTIFICATE PROGRAMME IN RESEARCH METHODOLOGY
AND
M.PHIL/PH.D PROGRAMME IN SOCIAL SCIENCES AND SOCIAL WORK

1. **Certificate Programme in Research Methodology** (one semester full-time in the second semester) after a Master's degree in the Social Sciences/Social Work.
2. **M.Phil in Social Work/Social Sciences** (Full-time and Part-time).
3. **Ph.D in Social Work/Social Sciences** (Full-time and Part-time).

ELIGIBILITY :

1. **Certificate Programme in Research Methodology :**

Master's degree in the relevant faculty with at least 50% of the marks/grade point average of 3.0 under the University Grants Commission 7 point grade system. SC/ST applicants should have obtained 45% of the marks/ or C grade, or grade point average of 2.50 under the UGC 7 point grade system.

Reservation for SC/ST : 15% for SC and 7.5% for ST.

2&3 **M.Phil/Ph.D Programme:**

Master's degree of the relevant faculty with 55% of the marks/grade point average of 3.5 under the University Grants Commission 7 point grade system.

RECEIPT OF APPLICATIONS AND COMMENCEMENT OF PROGRAMME

The applications for the Certificate Programme in Research Methodology are received till October 15, 1992. The programme commences on November 20, 1992. The application form and prospectus will be available from August 17, 1992, on request accompanied by Demand Draft for Rs.25/- along with a stamped (Rs.6/-) self- addressed envelope (8" x10.5"). The applications for the M.Phil/Ph.D Programme are accepted and the selection made throughout the year. The selected candidates will commence their programme soon after their selection. Applications and prospectus are available on request accompanied by Demand Draft for Rs.25/- along with stamped (Rs.6/-) self-addressed envelope (8" x 10.5").

SCHOLARSHIPS:

Seven (UGC) Junior Fellowships are available for the Ph.D programme. Only those who have passed the National Level Test conducted by the University Grants Commission will be considered for the award of these fellowships.

April 13, 1992

Dr S.K. Bandyopadhyay

REGISTRAR

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University News

MONDAY, MAY 11, 1992

Rs. 5.00

GOA UNIVERSITY
22ND FEBRUARY, 1992

From R to L : Prof. S.K. Khanna, Vice-Chairman, University Grants Commission (who read the Convocation Address of Shri Arjun Singh, Union Minister for Human Resource Development), Shri Bhanu Prakash Singh, Governor of Goa & Visitor of Goa University, Shri Subhash Shirodkar, State Education Minister and Dr. P.R. Dubhashi, Vice-Chancellor of the university.

SCHOOL OF PLANNING AND ARCHITECTURE

(Deemed to be a University)

4, BLOCK-B, Indraprastha Estate,
New Delhi- 110002

APPLICATIONS ARE INVITED FOR ADMISSION TO ACADEMIC PROGRAMMES (FULL-TIME) FOR THE SESSION 1992-93

BACHELOR'S PROGRAMMES IN
(i) ARCHITECTURE (5 Years) - 68 Seats and
(ii) PHYSICAL PLANNING (4 Years) - 20 Seats

ADMISSION ELIGIBILITY : Pass in Senior School Certificate Examination (on completion of the 10+2 pattern, 12 years course) of Central Board of Secondary Education, New Delhi, or any other examination recognised as equivalent with (a) General Science including Chemistry at the 10th Stage as a passed subject, (b) 60% of the aggregate marks or more in English (core or optional), Physics, Mathematics and one more (optional) subject in which the candidate has secured maximum marks at the 10+2 Stage, provided the subjects have been passed, (c) 55% or more of the aggregate marks in (b) above for candidates belonging to (i) Scheduled Castes, (ii) Scheduled Tribes, (iii) Children/Widows of personnel of Armed/Para-Military Forces killed/disabled in action during hostilities and (iv) Physically handicapped. Candidates, who are awaiting results of the qualifying examination, are also eligible to apply subject to the conditions as laid down in the Information Brochure.

SELECTION PROCEDURE : Selection for admission will be made through an Entrance Examination which will be held in two parts. Test-I consists of General Knowledge, Scholastic ability, and I.Q., and Test-II: Aptitude Test for Architecture/Physical Planning separately. Applicants for both B.Arch. and B.Plng. courses are required to appear in Part-I examination to be held on 12th July, 1992, at centres in Delhi mentioned in the admit card and Part-II examination on 14th July, 1992, in the School premises.

RESERVED SEATS : SC-15%, ST-7½%, Children/Widows of Personnel of Armed/Para Military Forces killed/disabled in action - 5%, Physically handicapped - 5%, and candidates belonging to Educationally Deficient States - *10% of the total sanctioned intake.
(* applicable to B.Arch. course only)

MASTER'S PROGRAMMES (3 Semesters) IN:

(i) **ARCHITECTURE** with specialisation in Urban Design/Architectural Conservation (open to B.Arch. Degree holders or equivalent only).
(ii) **BUILDING ENGINEERING AND MANAGEMENT** (open to B.Arch./B.E.(Civil)/B.Architectural Engineering Degree holders or equivalent.
(iii) **LANDSCAPE ARCHITECTURE** (open to B.Arch./Master of Planning Degree holders or equivalent).
(iv) **PLANNING** with specialisation in (i) Environmental Planning, (ii) Housing (iii) Regional Planning, (iv) Transport Planning, (v) Urban Planning (open to B.Arch./B.Engg. (Civil)/ B.Architectural Engineering Degree holders or equivalent). Candidates with Master's Degree in Geography/Sociology/Economics/Economics with Mathematics/Mathematics with Econometrics and Operations Research/Mathematical Statistics are eligible for some of these programmes.

ELIGIBILITY: Candidates with 55% of the aggregate marks or more at the qualifying examination (50% in respect of SC/ST candidates). Candidates who are awaiting results of the qualifying examination are also eligible to apply subject to the conditions laid down in the Information Brochure.

SCHOLARSHIP: Scholarships are available to students with valid GATE/UGC (NET) Score Card.

SPONSORED CANDIDATES: Maximum 50% of the seats in Master's Programmes can be made available to candidates who fulfil the admission requirements and are sponsored by Central, State Governments or Statutory Organisations as well as Public Institutions. In case of BEM, only 25% of seats can be made available.

RESERVED SEATS: SC-15%, ST-7½%.

SELECTION PROCEDURE: Restricted number of candidates based on their academic background will be called for interview to be held on 1st, 2nd and 3rd July, 1992, at 9.00 a.m. and selection for admission shall be made on the basis of performance of the candidates at the interview.

GENERAL INFORMATION: (i) Medium of Entrance Examination for Bachelor's Programmes is Hindi/English. However, medium of instruction for Bachelor's and Master's Programmes is English; (ii) Foreign nationals are required to apply to the Government of India through their diplomatic channels; (iii) For detailed information please refer to the Information Brochure which will be supplied alongwith application form.

IMPORTANT DATES

	BACHELOR'S PROGRAMMES	MASTER'S PROGRAMMES
1. (i) Issue of Application Forms Commences:		
(a) UCOBank Branches at Delhi : IIPA Extension Counter (I.P. Estate), Defence Colony (Near Moolchand Flyover), Connaught Place (Near Marina Hotel), Karol Bagh (Arya Samaj Road), Som Vihar (R.K. Puram), Punjabi Bagh (Ring Road) against payment of Rs. 100/- in cash (during Banking Hours only)	18.5.1992	18.5.1992
(b) By post from the School only against payment of Rs. 100/- by D.D. on SBI/UCO Bank in favour of School of Planning and Architecture, payable at New Delhi.	18.5.1992	18.5.1992
(ii) Last date of issue of Application forms:		
(a) By post from the School	8.6.1992	8.6.1992
(b) From UCO Bank Branches	11.6.1992	11.6.1992
2. Last date of receipt of Completed Application Forms at the School and by Registered Post	15.6.1992	15.6.1992

D.R. Bains
REGISTRAR

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Editor :
SUTINDER SINGH

THE UNIVERSITY COMMUNITY

A PATHOLOGICAL STUDY

M.R. Rao*

The university is the focal centre in the system of higher education in the country. It is the organized knowledge centre engaged in the enterprise of knowledge. Indian universities have come into existence through Acts of State Legislatures and the Parliament. University is a social organization and deliberately constituted for the purpose of producing graduates and knowledge (Research output).

The university derives its organizational structure mostly from the framework of Acts and Statutes. The university as an organisation system is composed of the activities of human beings. The major groups in the university are: (1) Faculty, (2) Students, and (3) Administrative staff. Activities of the three groups are inter-related and inter-dependent. Each group should be cohesive and all groups should unite as a community in order to achieve its mission and objectives.

What is a Community?

A community is a social organisation. It involves people acting together to obtain certain ends they hold in common. According to Amos H. Hawley “A community is a social organization that is territorially localised and through which its members satisfy most of their daily needs and deal with most of their common problems”(1). When we speak of “the academic community” or “the intellectual community” or “the scientific community” it has a different sense from the sociological concept of a community. The territorial setting in which one lives his life is not an essential element in such communities. As such the university has been considered as a ‘community of scholars’. MacIver and Page have stated that “The community possesses a distinctive territorial character. It implies a common soil as well as a shared way of life”(2). In this sense, we may take the “University as a Community”.

The Modern university organization is highly complex and it is not mere “a community of scholars”. The faculty and students are senior and junior partners in the academic enterprise. The university has to provide a variety of services both to the faculty and students. Universities have grown larger and larger, the administrative staff has increased in size and outnumbers faculty. The administrative staff is relatively permanent and its attachment is substantial with the university. The faculty attachment is also substantial but its attachment is high to individual discipline. The students' attachment is transitory but in continuum. All the three components are not only inter-related but also inter-dependent on each other. The three major groups i.e. faculty, students and administrative staff constitute the “University Community”.

Robert Nisbet has enumerated six elements integral to the existence of a sense of community within an organization: (1) a function to be achieved, (2) a transcending agreement as to values, (3) the recognition of authority founded in consensus, (4) an apparent functioning hierarchy, (5) a sense of solidarity, and (6) “a striking sense of not merely distance from the surrounding world, but of superiority to it”(3). This paper proposes to discuss the university community under the following subheadings: University mission and objectives; the image of a University, the relations between Faculty and Students, Faculty and Administration and Students and Administration, and finally democratization of University Community.

**Former Dean of Collegiate Education, Andhra University, Visakhapatnam 530 003.*

University Mission & Objectives

The purposes for which universities exist should be known to the public. This is possible through a 'mission statement'. Characteristically it is a statement of attitudes, outlook and orientation rather than details and measurable targets. When a university defines its mission, it serves as a focal point to insiders and outsiders and what the university stands for – its image and character. Pandit Nehru defines the basic objectives of the university and its role in national life in the following words:

"A University stands for humanism, for tolerance, for reason, for progress, for the adventure of ideas, and for the search of truth. It stands for the onward march of the human race towards even higher objectives. If the universities discharge their duty, then it is well with the nation and the people"(4).

Mission is general and objectives are specific. Generally objectives are those ends which the university seeks to achieve through its existence and operations. It helps in defining the environment of a university and provides for assessing the performance of a university. Dr. S. Radhakrishnan's report brilliantly narrated the aims of university education and Dr. Kothari Commission has defined the objectives of universities. Every University Act defines the powers and duties of the university but not what it stands for. It is essential that every university in the country should define its mission and objectives.

The Task Force on Code of Professional Ethics for University & College Teachers stated that the "Goal of Higher Education should strive for academic excellence, and progress of arts and science. Education, research and extension should be conducted in conformity with our national needs and priorities and ensure that our best talents make befitting contributions to international endeavour on societal needs"(5)

Today the society is demanding a variety of services from each mission, namely, transmission of knowledge, acquisition of knowledge and application of knowledge, i.e. teaching, research and public service. "It is no longer sufficient to say that higher education has the purpose of 'teaching, research and service', states one of the final reports of the Carnegie Commission on Higher Education, "Teaching to what ends? Research for what reasons? Service to whom?"(6).

The basic function of a university is the transmission of knowledge. The knowledge giver is teacher and the receiver is student. They are inter-dependent and complement each other. It is essential in any educational process. A.K. Rice termed it as "Dependent Culture". He said "As a minimum, the faculty is expected to provide an environment in which students can learn. Students are thus dependent on the faculty. But the faculty, in turn, depends on students"(7).

The economic reconstruction demands different skills and qualifications when compared to traditional skills and qualifications of yesterday. The traditional academic offerings may not match with the growing economy. It seems there is conflict between old knowledge and modern knowledge because orientations are different. The modern knowledge emphasises the transmission of skill for more specific roles when compared to the shaping of character under the old knowledge.

With the above background, the modern student entering higher education is entirely different from yesterday's studen· There is tremendous diversity of motivations, aptitudes, qualifications and aspirations among student population. There is an imbalance in the classroom because students are admitted not only on merit basis but also on the basis of reservation. Different cultural background, different levels of academic abilities and diverse levels of academic preparation are the characteristics of students in the classroom.

In order to meet the aspirations of students, qualitative changes should be introduced within higher education in terms of the content and structure of studies, teaching methods and openness to the outside world. But a few of the older faculty resist necessary changes, adaptations and diversification of courses. This is because of the inability of the old faculty to adjust to changes in curriculum and modes of teaching and learning.

Another essential mission of a university is the acquisition of knowledge i.e. research. Knowledge explosion specially in science and technology has created tremendous diversity in research. Today the emphasis is on new forms of research. The inter-disciplinary and multi-disciplinary approaches are essential for research in some of the areas such as environment, energy, biotechnology etc. A greater involvement of university is necessary in applied or problem-centred research to solve the problems of the local/regional community.

The university may claim that it should be left free to carry on its research activity by the demands for problem solving or applied research but the society insists on direct service from its research efforts. It may be noted that explicit emphasis has been placed on the need for

26 MAY

orienting the scientific research to rural development of the developing countries. Traditionally the scholars have developed a system of value for research i.e. freedom of enquiry. Most of the teachers of today seem to be doing research not for the purpose of discovering new facts or ideas or for the purpose of public service/extension but for the purpose of getting promotion. Now the social commitment is the new value in research activity which overrides the old value of freedom of enquiry. The academic community which is committed to old value should give place to new value. There are serious strains among the academic community to switch over from old value to the new.

The third mission of the university is public service. Public service has been defined as the application of special knowledge to the solution of problems in the society. The problems of changing society are numerous and complex. The society knows that the university has a capacity and ability to solve the complex problems of changing society. But the academic community may not venture to take up the mission of public service. It feels professional advancement depends mainly on research output not on public service. Further, due to lack of academic value, the academicians are reluctant to spend their valuable time on solving the social problems. Finally the university may not allocate its scarce resources for the financing of public service mission. On the other hand if the university abandons the mission of public service, it loses not only public confidence but also the credibility of the academic community.

The university should treat public service as an obligation. It is not enough simply to attend on the problems of society, but also should see what is the best structure of society. The Carnegie Commission under the caption of "The Changing Campus" pointed out, "The good society is not to be found so much in the natural laws of the universe or in man's individual sense of values or in constantly new knowledge and higher skill but in the determined convictions of men as to what is the best social structure"(8). The university has a responsibility to mould the society.

If State agrees to finance the public service mission through additional allocation of resources, the university should take up the opportunity to serve society. The Central Government has designed various technological missions to speed up development in India, such as Drinking Water, Immunization, Literacy, Telecommunication, Oil-seeds, Dairy Development etc. University should take up any one or all the missions depending on its capabilities.

Most of the universities are doing public service intermittently during the times of disasters such as floods, cyclonic storms, earthquakes etc. But university should interact with society constantly and continually in identifying and solving the societal problems.

The Image of a University

The image of a university depends upon how the university is discharging the above missions. Whether it should discharge missions on the basis of priority or there should be a balance struck between teaching, research and public service? Further, a university's reputation depends upon the quality and integrity of the academic work that its faculty and students perform.

Indian universities are highly privileged to offer research degrees irrespective of their academic capabilities and infrastructural facilities of the disciplines. The same privilege is not made available to the affiliated colleges. The public knows that a university department of study means teaching cum research department.

A continuous and constant struggle is going on over the relative importance of teaching and research. The faculty, especially senior faculty, is concentrating more time on research and less time on teaching, when compared to younger faculty. The UGC has suggested equal work-load per week i.e. 10 hours for teaching and 10 hours for research, out of 40 hours of weekly work-load for the postgraduate teachers. The rest of 20 hours is for teaching preparation (10 hours), own reading & administration (5 hours) and laboratory work and testing (5 hours). However, the UGC has recommended that senior teachers should have more number of research hours for guiding research students. "However, to the 10 hours of research per week on the average, it should be possible to add not more than 4 hours bringing the total of research to 14 hours per week"(9). There is a general complaint that most of the senior Professors are not available either for teaching or for guiding research but still they produce Ph.Ds. Prof Rais Ahmed's study on the status of research in Indian universities has revealed that sixty percent of the supervisors play hide and seek with their scholars, which results in very little interaction. In about 80 percent cases, in the main universities, there is not even an annual interaction.

Most of the time they spend in other organizations, in attending consultative meetings, viva-voce, spot-valuation of scripts, attending conferences etc. Most of the faculty will utilize "on duty" privilege to attend the above work. At times they go on leave without prior intimation causing academic discontentment among sincere students. That is the reason why the Task-Force on Code of Professional Ethics has suggested that teachers should "refrain from availing themselves of leave except on unavoidable grounds and as far as practicable with prior intimation, keeping in view their particular responsibility for completion of academic schedule"(10). A great surprise is that even during the days of their presence on the campus also teachers are not available in the department. Making a note of this, the GC has stated: "Teachers should spend a certain amount of time every day in the department/college whether or not they have direct teaching duties on certain days"(11). It is enough if they are available during teaching hours. The senior faculty should command respect by virtue of their wisdom and knowledge; but it is unfortunate they are 'demanding' respect from the juniors, research scholars and students. Strictly speaking, the junior faculty and research scholars virtually are prisoners of knowledge jail.

The agencies of central and state Governments are encouraging research in different disciplines through liberal grants. These grants helped the universities in the purchase of books & journals, equipment and award of research fellowships etc. The major output of research is in the form of Ph.Ds., but without any significant contribution to the stock of knowledge. The senior faculty is concentrating on research schemes/projects at the cost of basic teaching mission. It is also unfortunate, that the aid giving agencies generally give research grants on the basis of positions rather than talent and competence of faculty.

It is already mentioned that the university should treat public service as an obligation; the teachers should participate in public service/extension with equal importance to that of teaching and research. The public will assess the performance of the faculty through public service rather than research. On the other hand the faculty's professional growth depends upon research and publications. The academician questions what is it that the society gives in return for the services rendered. On the other hand the university's stake is high in public service and reputation depends upon the service it renders to society. The UGC has recommended that the work-load of a teacher shall take into account teaching, research and extension activities. This weightage does not give enough incentive to the faculty to involve in public service. Unless the university gives equal weight for the public service along with teaching and research in the performance appraisal, the faculty do not take public service as a serious mission.

Finally, university's reputation depends upon the maintenance of standards in teaching, examination and research. The society is now questioning and doubting the academic standards of degrees including research degrees. The modern society applies various yardsticks to measure the academic standards of degrees. It compares the degrees of one university with another university within a State and outside the State. It is also observing the performance of students in the National Tests including National Education Test (NET) which reveal the standards of degrees. When a student of a university with first class and first rank is not selected in the NET examination, it reflects the poor quality of university degrees. Currently most of the research directors are not able to award JRFs due to non-availability of qualified candidates in the field (pass in NET).

The image of a university finally depends upon the behaviour of its community. As already mentioned the major groups in the university community are (i) Faculty; (ii) Students; and (iii) Administrative staff. The performance of university depends on normative structure that shapes patterned interaction within a group and between the groups. "The various norms that specify the kinds of reciprocal behaviours that should take place for a given unit of social interaction are called a role"(12). Generally the participants will inherit norms along with shared culture, sentiments and values. The inter-relationship among the faculty members as well as faculty relationship with students and faculty relationship with administration are essential elements in the university community. Of late the inter- relationships between the students and the administration has gained considerable importance.

Relationships among the Faculty

The senior faculty serves on committees of learned societies, research councils, government departments and also academic administrative positions such as Chairman, Board of Studies; Dean of Faculty; Chairman, Results Committee etc. By holding superior positions in the academic hierarchy, they want to exercise control over junior faculty. The junior faculty members are actually aware of the Head/Chairman's influence in their work and careers; they tend to live in a world of conformity or confrontation. The senior faculty treats the junior faculty as apprentices rather than as colleagues. Most of the junior faculty are impatient and become intolerant to the behaviour of senior faculty. A.K.Rice while discussing participation in the decision making has observed, "It is, perhaps, hardly to be wondered at that junior members of the faculty and students in many universities are growing impatient and are, on the one hand, trying to invent new models of their own, and on the other exploiting the existing uncertainties to embarrass leadership"(13). Under such conditions, the faculty members do not identify themselves with the university objectives.

Now-a-days the faculty is divided not only on the basis of seniority but also on the basis of specialisations. The explosion of knowledge has created specialisations and super specialisations in each discipline. The members of the faculty are fighting among themselves to gain importance for each specialisation. The UGC prescribes "thrust" areas in each discipline while giving grants under Centres of Advanced Studies, Special Assistance etc. The relative importance of each specialisation in a discipline varies according to time and needs of the nation. The faculty of each discipline is not acting as a cohesive group for the advancement of knowledge.

The members of each specialisation in the discipline struggle in the departmental meetings for the introduction of that particular specialization at the postgraduate level irrespective of its academic or employment value. The indiscipline in a discipline has increased on account of over specialisations which has resulted in the creation of new and separate departments such as Chemical Oceanography, Physical Oceanography, Marine Geology, Marine Geophysics, Marine Archaeology, Marine Biology, Aero Biology etc. Specialisations are inevitable; it does not mean the basic structure of a discipline should be altered. Intra-and inter-disciplinary differences have increased among the members of faculty. Finally, the academic community became disruptive community rather than disciplined community.

The students should be engaged not only in curricular but also in co-curricular and extra-curricular activities. Generally these activities will be operated by specialised staff trained for the purpose of conducting co-and extra-curricular activities such as coordinators of NSS, Director of Adult and Continuing Education; command rank officers of NCC, Director of Physical Education etc. The faculty and specialised staff should have proper understanding of relative value of curricular and co-and extra-curricular activities. These activities will bring name and fame to the institution and the reputation of a university will be enhanced through these activities also. The specialised staff of co-and extra-curricular activities are popular in the public when compared to teaching faculty. Due to this the inner sentiments of these two wings may differ and the faculty resist students' participation in sports and games.

Faculty-Students Relationship

An important function of a university is transmission of knowledge. The transmission of knowledge generally takes place in the classroom/laboratory. The faculty are expected to provide an environment in which students can learn. Without students there are no faculty and without faculty there are no students. This mutual dependency is dependent on mutual respect and understanding.

Dr. Radhakrishnan Commission examined critically the indiscipline on the campus and observed. "The university has split into two groups. The world of teachers is separate from that of the students. The students adopt a trade union attitude to the authorities. They have little respect for their teachers and little concern for academic standards. They are convinced that the teachers are less informed than they about the illness of society in which we live. A restless youth, discontented with its older generation, conscious of talents and cramped by lack of opportunity, which draws simultaneously towards and away from the Indian pattern of life, eager, thoughtful, suspicious, requires to be treated with understanding by the colleges and the universities"(14)

Most of the students on the campus are unmotivated. One group of students are opting university studies purely as status symbol without intention of learning. Another group of students are joining the campus to avail the opportunity of scholarship and enjoyment of life. Some students are joining different courses horizontally as a stop gap arrangement until they settle in their livelihood. The unmotivated students' admission into university campus may be restricted through aptitude test/entrance test and the scholarships should be awarded to one PG course in the life time of a students.

If university turns a blind eye to students' attendance, the students may not attend the classes of some teachers. Unfortunately the university and college teachers are not trained teachers. The research oriented degree holders need not necessarily be good teachers. In some classes there is no teaching and learning except the presentational aspects of the course. Further, the subjects offered may not exactly fit into the academic structure of the degree or needs of students but it meets job opportunities for the teachers of that subject. The teacher and student should participate in the academic process and teacher should treat a postgraduate student as a junior partner. In the words of James A. Perkins, "The academic process is now viewed as one in which teacher and learner are equally involved, both in the selection of topics and in the manner in which, those topics can be taught. As students insist on the right to participate at the point where decisions are made about the content of their instruction, they are focussing on the department"(15). The teacher should prepare a programme sheet for the semester/year of his subject and present it in the concerned class. Today academic process is highly democratic and participation of faculty and students is essential in decision making.

Every faculty member is always concerned of his growth and advancement rather than students' future. There is a tremendous gap between teacher and student including research scholar on account of faculty preoccupation with research programmes. Our former Prime Minister Mrs. Indira Gandhi aptly remarked that "many of our teachers are preoccupied with their own publications; with visiting professorships and so on, so that the gap between the teacher and the student is growing. Students have a feeling of being neglected and then of course much time is spent not on teaching and research **but on trying to secure grants without which programmes cannot go ahead......"(16) The faculty is spending time and attention on research programmes at the cost of basic teaching function.**

Faculty-Administrative Staff Relationship

Administration & Technical Staff/Non-teaching staff, other than students and faculty, will be termed as administrative & technical staff/non-teaching staff, which is the third segment of university community. The Science, Technology and Engineering faculty is dependent on technical staff for carrying its mission of teaching, research and extension. Similarly the university is also dependent on technical staff for the successful maintenance of electrical, civil and mechanical works of the university. In addition to the works, the university has to maintain medical and health services, library; Press & Publications; Science Instrumentation & Computer Centres etc. In all the above units, the administrative and technical personnel are essential for the successful operation. This is the reason IITs have classified their employees into (a) academic (b) technical (c) administrative and others as follows:

(a) *Academic :* shall include Director, Deputy Director, Professor, Associate Professor, Assistant Professor, Lecturer, Workshop Superintendent, Associate Lecturer, Assistant Lecturer/Instructor, Scientific Officer, Research Assistants, Librarian, Deputy Librarian and such other academic posts as may be decided by the Board.

(b) *Technical :* shall include Farm Superintendent, Foreman, Supervisor (Workshop), Mechanic, Farm Overseer, Horticultural Assistant, Technical Assistant, Draftsman, Physical Training Instructor and such other technical posts as may be decided by the Board.

(c) *Administrative & Others :* shall include Registrar, Assistant Registrar, Accounts Officer, Audit Officer, Stores Officer, Estate Officer, Medical Officer, House Surgeon and other Medical Staff, Chief Store Keeper Steward, Office Superintendent and such other administrative and other staff as may be decided by the Board.

The importance of administrative and technical staff may be seen from the budgets of various universities. The universities are paying more than half of the total salaries towards administrative & technical and other staff when compared to faculty.

Various funding agencies such as UGC, CSIR, DST, DOE, DAE, DBT, ICSSR etc., are granting research projects to individual faculty members on the basis of assessment made by the funding agencies. At the time of sanctioning of research projects, the funding agencies indicate break-up of grant under various heads (recurring & non-recurring) such as travel, scientific and office equipment, books and journals etc. The university administers the research schemes/projects as per terms and conditions of the funding agencies. In this connection the faculty interacts with administrative staff and the administration takes this opportunity to exercise control over the faculty. The faculty is more knowledgeable about the type of equipment it requires, books & journals; when to travel and where to travel etc., than the administration. But the administration questions the academic honesty and integrity of the faculty. When there is no autonomy in carrying out a research project, there is a danger that faculty members become reluctant to submit research proposals to different funding agencies. Consequently there will be a fall in research output quantitatively and qualitatively. That is why the UGC has suggested autonomous status to deserving university departments, especially those departments having status of CAS, DSA, COSIST, DRS etc. Mutual cooperation and respect are essential between administration and faculty for the successful operation of research schemes/projects.

The faculty interacts very often with administration with regard to the administration of research degrees such as Ph.D. or M.Phil etc. It is true, correspondence with examiners, lifting of thesis to examiners, placing the reports of examiners before the Vice-Chancellor, Executive Council/Syndicate and other formalities and finally declaration of results are highly time consuming.

The research student submits thesis after a minimum of three years' struggle under the faculty guide. Both guide and scholars are anxious, worried, impatient and finally rebellious if the administration delays the process. The administration gives bureaucratic replies; consequently the faculty develops frustration. Finally there is no harmony and cooperation between the administration and faculty.

The administration wing of examinations is a sandwich between students and faculty. The centralised examination system has led to strains & conflicts between students and administration and between faculty and administration. The faculty should take responsibility for conducting of examinations and evaluation. Decentralisation of the examination system is necessary. Unfortunately the academic courage is lacking in the faculty.

The academic legislative body in the university is the Academic Council and its Secretary is the Registrar. The Academic Council transacts business brought forward by the Executive Council, Faculty and Boards of Studies, and any individual member. Generally it meets twice a year. In order to take quick decisions many universities have constituted a Standing Committee of the Academic Council, which can meet whenever necessary. Curricular changes are inevitable but every change should be brought to the notice of the Academic Council. The Board of Studies recommends certain changes etc., in the curriculum but its implementation takes after a long delay. However administration should quicken the process and place it before the Academic Council. But delays and lapses are quite common in the academic legislative process. Again the faculty makes complaints against administration for delays.

The university has to provide multiple services to its community including upkeep of the infrastructure of the teaching cum research departments. It is a tremendous task for the university to provide a complex of services to its community. If this task is removed from the university management it discharges academic tasks more simply, efficiently and effectively. The university generally entrusts the discharge of these services to various unit organizations i.e. service sub-systems within the university organisation. The maintenance of essential services such as electricity, water, transport, communications etc. is not only essential but also very very sensitive area. Whenever there is a failure/break down in essential services the faculty and students make complaints against the personnel of service sub-systems. Even the heads of the service sub-systems are helpless in taking action against employees since the employees are under the centralised administrative control i.e. Registrar.

The university's own resources may not be sufficient to make it self-contained to meet the demands of its community. Hence the service sub-systems are dependent on outside organizations for its inputs such as power from the electricity board; water from municipality etc. The university organization has to interact with supplier organizations for the prompt supply of inputs. The service sub-systems of university organization should deliver these supplies at the right time at the right place. But the personnel of service sub-systems form into unions for their rights without responsibilities. Unionization has become a powerful instrument to avoid work and responsibility. On the slightest pretext the employees go on strike and avoid work.

Students and Administrative Staff Relationship

Of all the three groups of university community, the student group has special characteristics of its own. The student community is supposed to share common values and shared sentiments of the total community of the university. But the degree of acceptance of these values by student community is highly negligible. The students lack an appreciation of the nature of scholarship or of the historical role played by the university in the past. They are not employees of the university. They consider their out-of-classroom-life strictly their own business and yet often use facilities owned by the university on its campus. Basically their objective on campus is to help themselves, not to help the university. Finally they are not bothered about the university's mission, goals and objectives even though they are part of the university community.

Unfortunately the student community is not one homogeneous community, but it has sub communities on the basis of caste, political affiliation etc. Students also form into sub-communities on the basis of reservation policy of state such as S.C. & S.T., B.C. and O.C. etc. Again students form into sub-groups on the basis of political affiliation and students contest in the union election on the basis of political and caste affiliation. The desires, goals and wishes of each sub-group are different from other sub-groups and conflicts between the sub-groups are common on the campus. It is an unenviable task for the university authorities to resolve conflicts between the sub-groups of the student community. The basic problem is that the principles of personnel relations do not apply between the university and students as it applies with regard to university and employees.

The major problem between the university administration and students is student residental accommodation and amenities. Living in the hostel is almost a preparation for life and it paves the path for the corporate life on the campus. Today's student's behaviour in the hostels/residence halls and classroom/laboratory is entirely different from that of a student two generations ago. The political, economic and social changes in the country had enormous impact on the student community. The university is not in a position to utilise student capacity to the full extent possible because the students are not ready to accept the commands of university. There is surplus idle energy in every student but the student utilises it according to his own wishes. In the words of Dr. Radhakrishnan Commission, "Surplus energy, not finding a legitimate outlet, misadventure, idleness and occasionally malice, all conspire to create mischief and irregularities of conduct"(17).

Various Committees/Commissions discussed the above phenomenon and suggested measures to prevent indiscipline and to promote good discipline in the student community. The Sadler Commission popularly known as Calcutta University Commission has suggested a Board of Student Welfare and University Education Commission has suggested an organization of office of the Dean of Students Welfare. Some universities have created the post of Dean/Director of Student Welfare as a statutory position in the Act. But some universities have created the position of Director/Dean of Student Welfare/Affairs through statutes as a flexible mechanism. The Andhra Pradesh Universities Act, 1991, has provision "to supervise and control and conduct and discipline of the students of the University and its affiliated and recognised colleges and institutions and to make arrangements for promoting their health and general welfare"(18) under the powers, functions and objects of the universities. A similar clause is also incorporated under the powers and duties of the Board of Management. Yet the Act has not incorporated the provision for the post of Dean of Student Welfare/Affairs. The Bombay University went ahead in creating "The Student Council" and identified it as one of the authorities of the university. Similar is the case of Kerala University.

Democratization

The university organization should be ideal and democratic. The policies of a university should conform to the social aspirations of its members and that its very style and functioning must conform to the ideal of democratic community within the university organization. Each constituency in the university community has increased its power through unionization in spite of diversities in each group. Power is not an authority but power is conditioned under authority. Robert A. Nisbet explains meaning of authority as follows :

"By authority, I do not mean power. Power, I conceive as something external and based upon force. Authority, on the other hand, is rooted in the statuses, functions and allegiances which are the components of any association. Authority is indeed indistinguishable from organization, and a sense of organization becomes a part of the human personality. Authority, like power, is a form of constraint, but, unlike power, it is based ultimately upon the consent of those under it; that is, it is conditional. Power arises only when authority breaks down"(19).

All the three segments of the community should share the authority and responsibility. In other words, the members of the university community should participate in the decisions that affect them. Faculty members are experts, professionals intellectuals. All these qualities are moulded in the form of faculty power. All universities have institutionalised faculty power into authorities. The various authorities in the academic hierarchy are Academic Council, Faculty and Boards of Studies. Generally the Academic Council is the principal academic authority in the university. Faculty is the middle level authority between the Academic Council and Board of Studies.

Faculty is a federation of departments having common academic background. The departments are usually classified into faculties of arts, science, engineering, law etc., and this is based on tradition and convenience. The number of faculties and of the departments within a given faculty varies from one university to another. The faculty may consist of only one department as in the case of the faculty of law or commerce, or pharmacy or it may consist of a large number of departments as in the case of faculty of science or arts. The composition of faculty varies from university to university as it is based on tradition or convenience. Further, the Bombay University Act made a provision that there shall be a Board of University Teaching and Research for each faculty.

The basic authority in the academic hierarchy of a university is Board of Studies. It is attached to each department of teaching and research for the determination of academic task of the department. It prepares academic programmes and these are finalised in the Academic Council through "Faculty". This process of task determination is described by Eric Ashby as "Inverted Hierarchy".

Various committees have suggested an ideal composition of Board of Studies but the basic philosophy is that it should be broad based so that younger faculty will have chance of ventilating their views. The Gajendragadkar Committee has suggested that besides all professors, two readers & two lecturers of the department should be included in the Board. The participation of younger faculty in decision making will be beneficial to the university. Eric Ashby aptly remarked that it is only at the "level of the departmental decisions that the young academic can take his first steps in University Government; if at this stage he does not learn the art of decision by discussion and consent (which is basic to the stability of universities) he is likely to be clumsy if he is obliged to practice it later on"(20).

The faculty members specially the Deans, Heads and Chairpersons of Board of Studies are competent persons to calculate the inputs that are required for the operation of academic programmes. The Senate is the principal authority for all financial estimates and budgetary appropriations in any university. As such the voice of faculty in the financial decision making body should be heard. "Faculty members have a natural, personal interest in the whole range of such financial decisions, and at times the faculty as a body will be deeply concerned with particular budgetary decisions. Their dependence upon the financial well being of institution entitles them to full information about such decisions and an opportunity to voice such views as they wish to be considered"(21).

The Executive Council/Syndicate originally was an Executive Committee of the Senate and in the course of history it received statutory recognition as an authority of a university. Generally it should be composed of the representatives of the Senate and Academic Council in the true spirit of autonomy. But today the Executive Council is composed of not only internal members but also externals. Most of the externals are either ex-officio or nominated members. There is imbalance in the power structure of the Syndicate/Executive Council. Since the appointment of Vice-Chancellor is political, he yields to the pressures of the ex-officio and nominated members rather than members elected from the Senate and Academic Council. Thus the faculty representation in the Executive Council/Syndicate is not effective in true sense of autonomy.

In recent years the student power has increased on the campus. The student unrest and their demonstration of power has resulted in the reconsideration of their role in recent years. The Indian Constitution has recognised that eighteen years of age is sufficient for the adult franchise. This legal status has enhanced the students' power and the institutionalisation of this power is inevitable. Thus the students' participation in the governance of a university is consistent with democratic values of university community.

Various committees/commissions have suggested various measures for the participation of students in the university governance. In the area of academic administration, the students are nominated to the Board of Studies, Faculties and Academic Council in various universities. The Kerala University went ahead in nominating a student to the Syndicate which is the supreme executive body of a university. In recent years all universities in Maharashtra have recognized the student power and created "The Student Council"(22) as one of the authorities of the university. The functions of the Council are to :

(i) supervise and coordinate the activities of the different Students' Associations, societies and other organisations;

(ii) recommend to the Executive Council the financial allocation to be made for the activities to be undertaken under the relevant budgetary heads;

(iii) allocate funds for the different activities of the students' associations, societies and other organisations, as sanctioned by the Executive Council;

(iv) submit an annual report of its work together with a statement of its accounts to the Executive Council, within a date to be fixed by it;

(v) make recommendations to the Executive Council regarding any matter affecting the corporate life or welfare of the students, and

(vi) make recommendations to the Executive Council regarding the facilities existing for instruction.

Finally, faculty and students have gained power and they are participating in various authorities of a university.

The third segment of a University is Administrative and Technical staff (generally referred to non-teaching staff). This segment exists not to dominate faculty or students but to serve them. Generally they are larger in number than faculty and they are in different cadres like Administrative Officers such as Registrar, Controller of Examinations & Finances, Deputy and Assistant Registrars, Clerical Staff, technical and manual workers. Of late a good number of professionals have entered the non-teaching staff such as medical, library, audio visual, engineering, computer centre, communication staff etc., even though they do not teach but they are closely associated with faculty and students in the performance of their functions.

Hitherto there was a feeling that the administrative staff is a part of the administrative hierarchy and hence there is no need of their participation in the governance of a university. The administrative staff is highly heterogeneous in its composition. The upper level staff such as Registrar, Joint, Deputy & Assistant Registrars by virtue of their positions want command over the faculty and students. The lower levels in the administrative staff such as Class III and Class IV employees are larger in number and they have developed their own mechanism of trade union activities to press their demands. The new professional staff are taking support positions but they do not enjoy the rights, privileges and status that faculty members do.

Since the administrative staff is a part of administrative power structure, it has responsibility for interpreting rules and regulations, government orders, UGC instructions, terms and conditions of funding agencies of Central and State Governments etc. The power of interpretation of rules & regulations and its implementation has resulted in strained relationships between the administrative staff and faculty. There is no realisation that both the parties are partners in a cooperative venture. The Task Force on Code of Professional Ethics for University & College Teachers has suggested that

(i) teachers should treat the non-teaching staff as colleagues and equal partners in a cooperative undertaking, within every educational institution; and

(ii) teachers should help in the function of joint staff councils covering both teachers and the non-teaching staff.

Tensions are growing in the relationships between faculty and students and faculty and administration. The faculty is not understanding the complexities of administration and the administration is not understanding the peculiarities of academic performance. The students who are transitory in the campus are restless, rebellious and impatient in their behaviour and they are not satisfied with the services rendered by academic and administrative staff of a university. All the constituent elements of the university community must be united through consensus. The interaction among the three constituent elements of the university community should be rationalised. This is possible through a code of ethics for the faculty, administration and students, which will define standards of behaviour for all the three groups. The code of ethics should be designed through consensus. It is heartening to note that the UGC has prepared a Code of Professional Ethics for University and College Teachers. The university community should be integrated for the common needs, common commitments and common aspirations.

Conclusion

The above study indicates there is no sense of community among the three major groups of the university community. These groups should be integrated towards university mission and objectives. In other words, consensus should be achieved among these segments under the assumption that they have a common goal. The image of a university depends upon academic integrity and it is the responsibility of all those who perform academic work, whether it be the research, scholarship, teaching and service. A professional code of ethics is necessary to guide individual conduct of faculty members and administrative officials. A sense of mutual respect and cooperation among these groups and within a group is essential for the community. The traditional authorities of a university are not coping with changing behavioural patterns of faculty, students and administration. With a view to create a sense of community in all the segments of the university, old authorities should be redesigned and new authorities should be created wherever necessary in the management of university.

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WOMEN AND SPORTS
Seeking a New Philosophy

Kiran Sandhu*

I, as an active sportswoman of yesteryears, perhaps unconsciously realised a lot many things regarding women and sports. I knew, read in the papers, noticed in environment but never stopped to think for a while about the situation as a whole in our society. But, after a little conscious thinking I feel that women in sports even today are so insecure, without any concrete guidance or direction. While a lot has been done for women in general, an overall lack of interest is still evident in the essential area of sports for welfare of women. There are numerous other reasons emphasising the need to have a clear look for better perspective of the phenomenon of 'Women and Sports', besides providing something to live and strive for in life. Even on the turn of the present century, sportswoman is looked upon as a very special case in two regards : one, on account of her interest in sports, she is looked upon as a special kind of woman; and two, that she is a woman, she is looked upon as a special kind of athlete. However, before making any attempt to understand women and sports as of today, it is logical to trace back the roots of sporting heritage which supported the rise of modern sports and women in sports. It may also be of some help to recognize pattern of development and identify the cultural determinants which influenced sports and reflected society.

Rise of Modern Sports for Women and Impact of Women's Movement

The rise of modern sports coincides with the rise of industrial capitalism. By the 19th century sports was seen as a safety-valve and developed as a means of inculcating right attitude for the ruling class. But women still had no role to play, rather even watching sports was discouraged. By the end of 19th century, American college going girls were certainly healthier than their mothers. Physical education and gymnastics became essential component of girl's education programmes, and ideal of womanhood from sickly beauty of 18th century changed into the beauty of 'perfect health and high spirit'. By the beginning of 20th century women's participation in sports was reckoned to be a mark of their 'real emancipation'. Ironically, despite the giant step women had taken in sports, Pierre de Cobertin, while reviving the Olympic Games, defined, "Women have but one task that of crowning the winners with garlands". Women's sports in 20th century gained a new image only after the First World War, since women took to many jobs which earlier were only performed by men, and this brought about the change and awareness in society about physical capabilities of women and need for strength and confidence among them.

Competitive sports for women were introduced in Olympics as early as 1912. The second boom in women sports came after the Second World War, whereby performance of women was full in competitive sports. All through the sports history, official sports bodies have been putting all kinds of restrictions on women while universalising and regulating norms for sports. Until 1981 IOC did not have a single woman as its member but today its members include both men as well as women. Until the sixties, there were few major changes in the world of sports concerning women. Women continued to make impact, break records, but did not make major gains.

It was primarily the emergence of the women's movement in the West which made a major impact on the nature of women's participation in sports. The central focus of early sixties was on logical linkage in values attributed to biological functions of women's body; later it supported that women's participation in sports would be able to change the nature of activity in receptive manner to women's natural abilities and concerns. Birth control, family planning and health movement brought consciousness about exercise, food, lifestyle etc., and generated the climate and conditions for their greater participation in sports. So much so, women even started taking interest in changing rules of the games. In 1972, in the U.S.A., government passed legislations providing equal opportunity to women in sports. In 1979, the American College of Sports Medicine recommended that "females be allowed to compete at national and international level in the same distance in which their counterpart men compete". Surprisingly, the legislation was vigorously opposed and recommendations were challenged by various quarters, not much for any other reason but its being a blow to male supremacy in the area of sports.

Although contemporary sports for women, in India, cannot entirely claim to be of world class, but the sport by itself, by no means, is something new or strange to the country. For example, Shakuntla taught archery to her

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son; Kunti in Mahabharata took to play in leisure time and the Indian history provides stirring examples of women of martial race fighting side by side with their men in times of emergency. Tales of Rajput and Maharashtrian chivalry suggest that women of those races were skilled in riding and chase. Miniature paintings of Moghul period show women playing Polo. Chess was still another game where women proved their prowess. Indian women have also distinguished in allied areas -- art and dancing -- of sport. A closer look at evolution of dance in any society presents an understanding of how women expressed themselves through such means.

Coming to modern times, it must be admitted that Indian women were not seriously interested in sports till the early 1900's. Club life, which was introduced into Indian by the British, however, did encourage women official class to indulge in a lady-like exercise to kill long hours of leisure. Though average Indian women remained unaffected by such mild form of activities, it did stimulate the interest among mothers to adapt to curriculum of physical culture in new schools for their daughters. For example, the Kanya Mahavidyalaya, established in 1896 in Jalandhar City (Punjab), included the imparting of physical instructions as part of its objectives, even though the main purpose was the making of "a successful housewife", viewing them ideologically mainly as reproducers. The seriousness towards sports by women was first noticed in 1930's. Women pioneers had taken a lead. Rajkumari Amrit Kaur, Health Minister of India's first Cabinet, took to competitive tennis. Pandit Kshma Row took to serious tennis in 1920 and set the same example in Western India as Rajkumari did in North. The 1934 bi-annual national athletic meet could see four women events 100 yards dash, 86 yards hurdles, high jump and shot put, to mark the beginning.

The Constitution of India has provided for sex equality. Social legislation has ensured rights for women, revolutionizing her place in public and private life. The equal status also applies to sports activities, which is evident from the fact that the national plan for physical education and recreation is applied to boys and girls equally well at all levels of physical well being and mental prowess. Indian women have also been provided opportunity for national and international sports experience. Thus a history of women sports which started with hide and seek, run and catch, hunting, animal fight, chaupar and card-playing, now have various popular games in its culture, such as hockey, basketball, tennis, swimming, table-tennis, badminton, volley ball, chess, athletics attracting steady increased participants. Indian women have also shown keen interest and steady growth in the so-called men games like football, cricket, marathon, rifle shooting, flying and cycling. Here, a special mention is necessary that Late Prime Minister, Mrs. Indira Gandhi, was awarded Olympic Order in 1982 in recognition of her contribution to sports movement.

However, the long journey of sports from Shakuntla to Rajkumari to P.T. Usha can be counted on fingers. The records available indicate a steady growth which is not really satisfactory but is an evidence of women in sports seeking a new image. But the point of utmost concern is that micro-satisfaction of P.T. Usha, Asha Aggarwal or Soma Dutta and others does not add up to a macro sign of relief. In an attempt to analyse the root of the problem, while we put one finger in one hole in the dyke, another bursts, while we explode one myth another reappears.

Constraints of 'Women and Sports'

Considering the constraints operating on the women and sports, it is felt appropriate and necessary to look critically on the ways in which the society is structured and sports women's existence in it. Since characteristics of people do not explain the cause of behaviour, rather they are clues to the socially created and culturally defined roles, choices and demands, a casual analysis must trace the underlying factors determining the situation in which the role of sports is played, opportunities provided and achievements acknowledged. Let us not forget that a woman is a living human being and does not operate in a vacuum, but is affected by its relationship to several factors including the cultural definition of sports, social and institutional arrangement in the family and sports, as well as personal orientation. However, she is fully cocooned in our social system with its ideology and religion, economic settings, political and legal system.

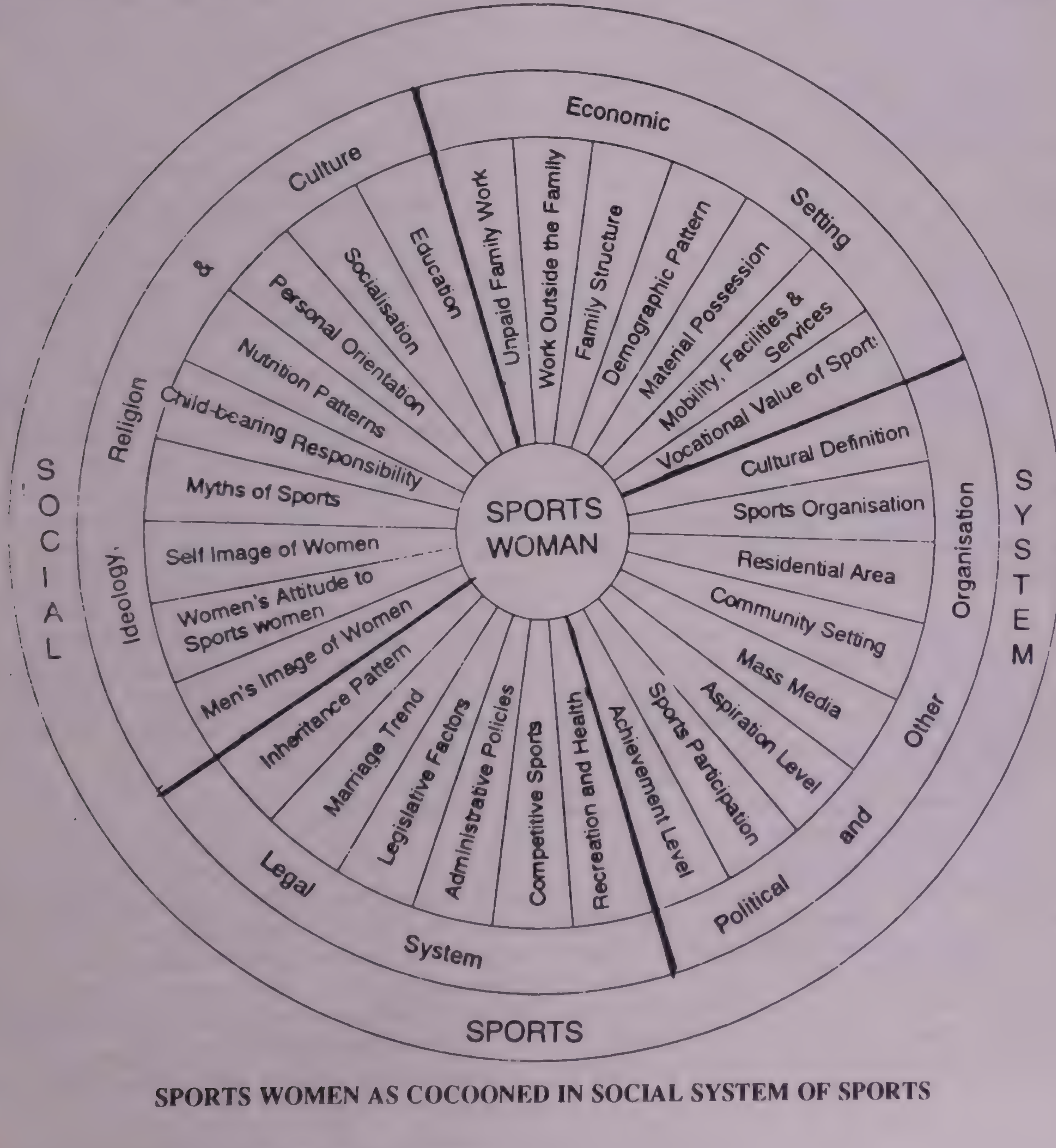
The innermost circle representing sportswomen is to strive for survival and excellence through various stages to the outermost circle representing highest level of macrosocietal system, thus various forces are working directly and indirectly on women's involvement in sports. Since cultural definition of sports is basically masculine in nature, it is related to the women and men quite differently with a positive orientation to men and more negative and less supportive orientation to participation of women. The organisation and promotion of sports itself is not generally oriented towards the participation of women in general and those who do become involved are less actively supported. Similarly, as women's commitment to family increases, participation in sports decreases, the level and nature of such demands also vary with age and position in family. Restrictions of mobility, resources, time and energy also directly affect the women's participation in sports and their commitment to it. Demographic pattern of the family, aspiration and participation - achievement level, community setting and residential areas, myths and superstitions among men and women towards sports and women; cultural and political prejudices, lack of good leadership and sports education, and the like are among other factors influencing women and sports in a very strong way. The continued assumptions that the responsibility for child rearing, family and house management lies with women alone places several strains on women's health, limit their capacities to participate efficiently in sports and further jeopardise their chances for a fair share in the benefits of sports society. Although there is evidence of a general change towards a more neutral pattern of behaviour for women, yet traditional constraints with their impacts broadly identified as societal (that is implicit within the structure of the society) and physical (relative elements with sports activity patterns) strongly influence the determination of sports pattern for women in the society.

Development Perspective of Women and Sports

It may seem strange, but much is happening in India on the Women front in general which deserves praise. The matter of utmost concern for women is to be physically and mentally strong. It has been realised that women as 'sports women' and 'sports stars' are capable of being the potential and true pioneers of women's movements to carve a place for themselves in the society. However, to understand developmental perspective of women and sports as of today, one needs to consider critically 'Sports', 'Women' and 'Development'.

Sports

Sports is a commonly used term with so many conno-


SOCIAL
SYSTEM
SPORTS
Economic
Setting
Culture
&
Religion
Ideology
Organisation
Other
and
Political
Legal
System
SPORTS WOMAN
Unpaid Family Work
Work Outside the Family
Family Structure
Demographic Pattern
Material Possession
Mobility, Facilities & Services
Vocational Value of Sport
Cultural Definition
Sports Organisation
Residential Area
Community Setting
Mass Media
Aspiration Level
Sports Participation
Achievement Level
Recreation and Health
Competitive Sports
Administrative Policies
Legislative Factors
Marriage Trend
Inheritance Pattern
Men's Image of Women
Women's Attitude to Sports women
Self Image of Women
Myths of Sports
Child-bearing Responsibility
Nutrition Patterns
Personal Orientation
Socialisation
Education

SPORTS WOMEN AS COCOONED IN SOCIAL SYSTEM OF SPORTS tations ranging from professional Cricketer or a Footballer to a Chess player or a daily Jogger. Sports mean one thing to a particular individual and quite another to some others, depending upon one's orientation. On the continuum of play to sport it has various characteristics attached to it. For example, Play is recognised as free, uncertain, unproductive and governed by rules; Games being competitive is taken to be determined by physical skills, strategy or chance; whereas sports is supported by evident history which speaks for its continuation in future; it is also recognised as an institution by way of having stable patterns of organisation, technology, symbolism and education. Sports today is accepted to be reflective in society in all forms of life ranging from clothes, diet pattern, automobiles to education patterns. It is also altered and affected by the demands of spectators and nature of rewards external to the activity. In nutshell, sports today, has established that it has an objective and a logic of its own as well as a definite end to be achieved. Thus, participants of sports take to sports with a variety of actions which are related to each other with reference to that end.

Women

Woman has been variously defined and accepted as fundamental to the very existence of human race, being the mother and a strong link between generations. Women's status in traditional India is a long walk. She commanded respect and recognition in Vedic era true to the motto, "Where women are worshipped God resides there". She was also viewed later in the light of orthodox Smiriti writer Manu, who wrote 'She should do nothing independently, even in her own house. In childhood subject to her father, in youth to her husband and when her husband is dead to her sons, she should never enjoy independence'.

Women in sports in specific reference to India can best be understood by having just a glance at of the philosophy of Hinduism, which always held high the idea of "physical perfection" a perfect understanding of body and mind through salvation. But the attainment of such a physical culture was forbidden to certain sections of the society such as women and lower castes. Traditionally, the biology of women has always been taken into primary cognizance for justifying and explaining her role. Dissimilarity of biology to that of man's has been seen as women's disability, bearing children and nurturing them has been considered her milestone. Women with reference to sports has also been explained in relation to 'social sanction', which otherwise has been denied to keep 'women in their place'. However, sports arena perhaps proved to be the best platform to demolish such myths most effectively. Successful inclusion of women's marathon in 1988 Olympic Games is an illustration of slow but successful process of eroding traditional attitudes.

The change in the position of women and their role in society is also best described in the words of Late Shri Rajiv Gandhi, that, half of the world's talent and energy that women carry can no longer be ignored. One can imagine the pace and direction of development in the world today when all the potential that men and women possess is fully utilized for total welfare. It will not be the matter of numbers but also of quality in all walks of life. Women have potential of adding a different thrust to development.

Thus, woman which was once considered as a Goddess -- a 'Devi', later of a weaker body and mind, today is accepted to be a normal human being, as normal as any one else to pursue excellence, betterment, and to contribute to the realization of global peace by all means.

Development

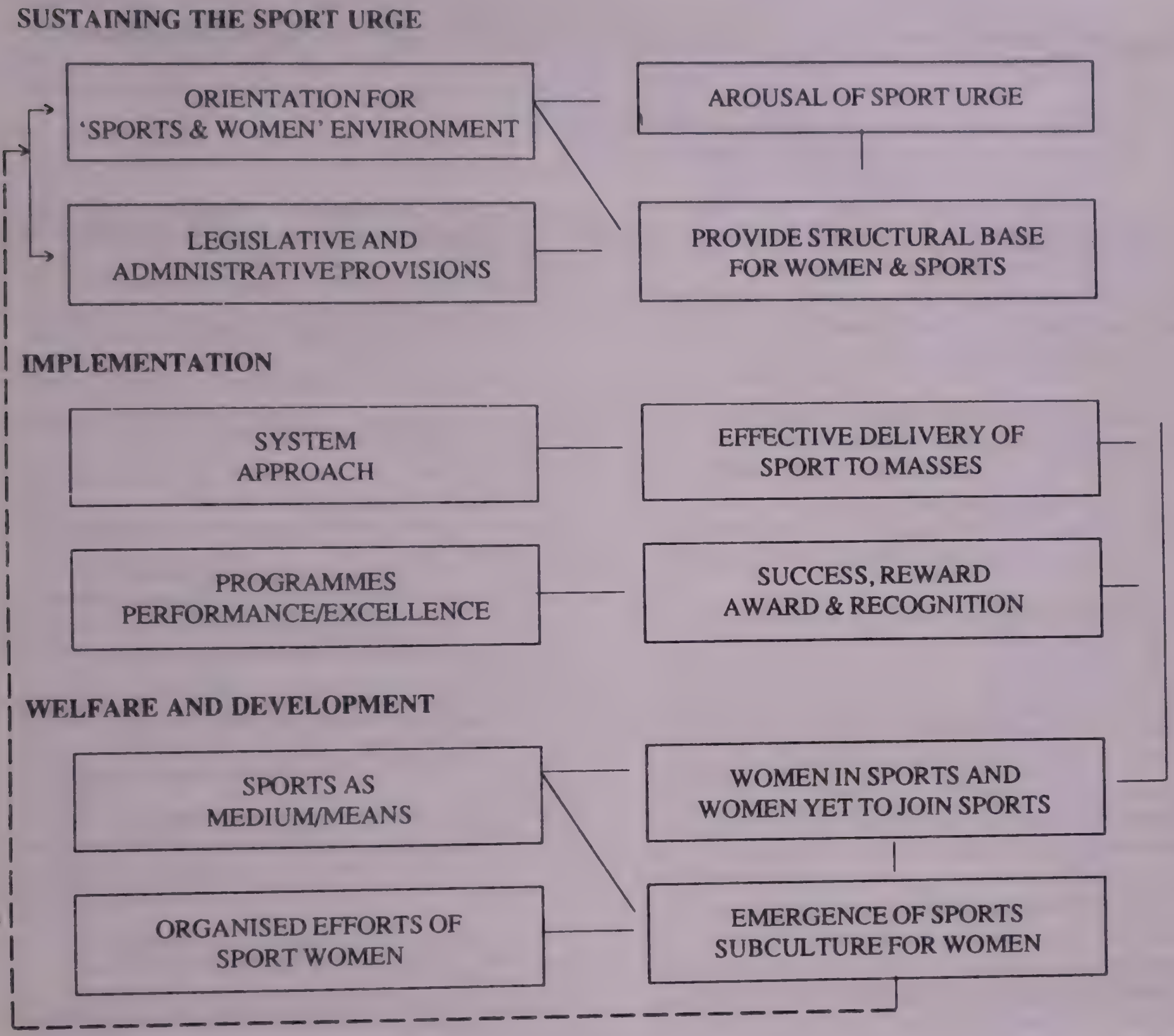
Development, individually speaking, to my mind is a long run phenomenon for personality development both physical and psychological having positive and upward direction. Development is also described as a change in knowledge, attitude and behaviour which helps the society to be aware of its rights; enables individuals to think and plan peacefully for one's present and future, thus exposing the vistas of life of which one is not aware of. Development also means awareness of self respect, rights and status in society ultimately aiming at better inter-relationship among social, economic and cultural aspects. Development shall lead to assuring physical, mental and social well-being of all sections of population in the society not only of some individuals. Development as a process in reference to 'Women and Sports' in our country proposes constructive, positive and feasible changes to be made for betterment, upliftment or improvement of the area as a specific activity. It should not be giving something to someone, but it should mean helping to develop one's talent, capacities, or abilities in order to raise the quality of life.

A Suggestive Model

In the background of the present scenario, I wish to submit a suggestive model for consideration for future changes. I also understand that future change depends critically upon complex and unknown elements. However, emphasis here is to have more alternatives and initiatives in order to create new situations. Essentially, it is important to recognize that women in sports is fundamentally not a sports issue, but is the case of

DEVELOPMENTAL PERSPECTIVE OF WOMEN & SPORTS

A SUGGESTIVE MODEL


SUSTAINING THE SPORT URGE
ORIENTATION FOR 'SPORTS & WOMEN' ENVIRONMENT
AROUSAL OF SPORT URGE
LEGISLATIVE AND ADMINISTRATIVE PROVISIONS
PROVIDE STRUCTURAL BASE FOR WOMEN & SPORTS
IMPLEMENTATION
SYSTEM APPROACH
EFFECTIVE DELIVERY OF SPORT TO MASSES
PROGRAMMES PERFORMANCE/EXCELLENCE
SUCCESS, REWARD AWARD & RECOGNITION
WELFARE AND DEVELOPMENT
SPORTS AS MEDIUM/MEANS
WOMEN IN SPORTS AND WOMEN YET TO JOIN SPORTS
ORGANISED EFFORTS OF SPORT WOMEN
EMERGENCE OF SPORTS SUBCULTURE FOR WOMEN

'societal-approach' which reflects sports. For example, social inequality or the view that certain sports undermine feminity is the most difficult to overcome, because it often has the support of many women.

There are number of routes which may be taken to increase female opportunity in sports, sports consciousness among women, and freedom of choice for women to choose activities from available attractive alternatives. First and the foremost is to have positive orientation of society at large towards sports, to be followed by demand and provisions of policies, funds, facilities and infrastructure. True, social orientation and provisions are interrelated and interactive concepts to create an atmosphere and sustain the urge to play. Even if social attitudes are slow to change there can be no excuse for better input for policy – plans, administrative provisions and implementation process to generate social orientation projecting 'Women and Sports' as the in-thing of life.

Frankly speaking, there is a need to create a sports subculture for women. Accordingly, approach towards women and sports will have to be two pronged to meet the requirements. First to undertake programmes, which will directly lead to the growth of sports for women, and, second, to ensure that society with regard to sports women moves in the direction which will assist and support women's development in sports rather than be a hinderance to it. This approach, I feel, should underline the adoption of strategies for advancement of women and sports, specially keeping in view that, of late, women of all ages have become increasingly active. So also, as a professional obligation for anyone involved in the process of development of women and sports, following categories have been identified to encourage greater participation from women:

- Women who are already part of the sports and women who are wanting to enter the world of sports,
- Women who have access to facilities, services and information of sports programmes and women who do not have the access, and
- Preparation of a sports woman from the very birth onwards.

If a bird's eyeview is taken of issues of women and sports, four major areas arise for development process:

- Structure of sports for women in terms of women's rights,
- Sports programmes at formal, non-formal level of women education : sports for all,
- The Olympic Games : international dimensions of women in competitive sports, and
- Welfare and development of women in sport : Sports as a medium of women's development.

Formulation of appropriate plans and policies considering various sections of women within the society and taking care of major issues of 'Women and Sports' needs them to reach the concerned sector of beneficiaries. And, here is the need to have a system approach for provisions of sports to reach the masses for its lateral and horizontal growth. However, programmes for excellence in no way can be given secondary status in view of the accompanied values of award, reward, recognition and the like. Thus, whereas the system approach for effective delivery of sports to all is a necessity of the broad base of the pyramid, sports excellence programmes are the real thing on the top of pyramid in terms of national prestige and symbol of progress. The two facets of the implementation process are complementary than supplementary to initiate a real change in the structure of women and sports. I personally feel convinced that real development in the area will set-in only when sports will get projection and acceptance of being means to attain the quality of life than of its status as today of an end-product.

Furthermore, there is a need to have committed force to work for the cause with a new philosophy, a philosophy which is not the business of a few thinkers, but a philosophy calling for the concern of all people and all ages. In this endeavour noone can play better leading role than the sportwomen of past, present and of the years to come. If sportswomen's movement wishes to assert that women in sports are a force and can revolutionize the society it needs to have a broad base. I suggest that Indian sportswomen do the same and build their roots but after a great deal of further analysis of their connections within the society, build a philosophy theory and strategy out of their own experience as women, especially as sportswomen, rather than adopting the traditional theories to their needs.

Let us try to inculcate the idea, which should reach across the masses, that women turned into sportswomen, would be able to provide for a solid foundation for a peaceful and prosperous India and would, at the same time, promote universal brotherhood and global understanding.

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Peshawaria Anu – Former National Tennis Champion.

A Study of Relation Between Actual Marks and Marks Expected by Students

Dhram Buddhi*
Bhumesh Gupta*

Introduction

In India several methods of examination are prevalent for evaluating the performance of the students. The evaluation system differs from university to university and may differ even within a university between university teaching departments and colleges. It is possible that results of different methods of evaluation may not be same. In addition when a student takes an examination he has some idea of the marks he may obtain. There may be a difference between expected marks by a student and the marks actually obtained by him. This difference may depend on the system of evaluation e.g., in internal evaluation system the copies are shown to the students and they can discuss the marks given by the teacher if not satisfied, while in another system it is very difficult for the students to judge the distribution of marks as evaluated copies are not available to them and they cannot discuss it.

Therefore, it was planned to conduct a study to investigate the variation in actual marks obtained and the marks expected by the students. A preliminary study has been carried out on the PG students of a university teaching department which has adopted the semester system and the papers were evaluated by the same teacher who taught them. After evaluation the test/examination copies were made available to the students who extensively discussed the marks obtained and corrections were immediately made by the concerned teacher if any omission or error could be found.

Methodology

After appearing in the test/examination of two papers the students were asked to give their expected marks before they were shown the marks actually obtained by them. The concerned subject teacher evaluated the copies and distributed them to the students.

Those students who were not satisfied with the marks discussed with the teacher till they were satisfied. In the process some of the students were given additional marks also if any discrepancy was found.

The present study is based on 15 PG students of a university science teaching department. Correlations have been calculated between actual marks obtained and expected marks using Pearson Product Moment Correlation formula. The percentage variations in marks obtained were also calculated with respect to expected marks.

Results and Discussion

The coefficients of correlation between actual marks and expected marks are given in Table 1 for two examinations of two papers of a university science teaching department having semester and internal examination system. One can see from the Table 1 that the correlations are significant at the level of .01 except in second examination of second paper. Low correlation in this paper could probably be explained as follows. In contrast to all other papers, the numbers assigned to each question were not given to the students in this paper. This explains the larger variations in expected and actual marks and hence low correlation. However, in all the examinations, the students were satisfied with the marks after discussion with the concerned teacher.

TABLE - 1

Correlations between expected marks and actual marks obtained by the students

PAPER I		
Exam	I	0.88
Exam	II	0.65
PAPER II		
Exam	I	0.75
Exam	II	0.33

(*Contd. on page 19*)

**Academic Staff College, Devi Ahilya University, Indore.*

Need for Restructuring Undergraduate Courses in English

A.L. Deshpande*

English : A Strictly Vocational Course

There is a lot of discussion about imparting job-oriented education through our universities. In fact the whole concept of university as a place where knowledge for its own sake is searched and disseminated is undergoing a metamorphosis. A number of short-term job-oriented pre-degree and post-degree diploma courses are being increasingly introduced in our institutions of higher learning. This trend is the manifestation of an extremely pragmatic approach to higher education adopted by our educational planners. Such a trend might even be inevitable in circumstances obtaining in our country at present. My contention in this paper is – that without assuming the formal robes of a vocational course, teaching of English – if properly handled could impart the most basic skill to our pupils who badly need such a skill and on the possession of which depends the welfare of our society. This basic skill is of communication which consists in the ability to organise and express ideas in writing and speaking.

Since a large number of pupils come to us who do not possess a natural writing or speaking talent they need training in this skill which can be imparted by the teacher of English. It is his responsibility to lay firm foundations for skill in expression by helping him to develop an interest in and an ear for language, by providing him with ample opportunities where he will be required to organise ideas and data and brush aside the irrelevant, where he will learn to fuse outward form with an inner content into one structure and above all, where he will develop the habit of verbal expression.

To borrow Peter Drucker's words we are fast-turning into a society of employees. It cannot be denied that a large number of our pupils will be working as clerks, teachers, probationary officers, managers, salesmen, accountants etc., after they obtain their first degrees or even earlier. In working in all these various capacities, they will need the basic skill of communication and their success in their chosen jobs will depend to a great extent on the felicity with which they will be able to use the English language.

Apart from the fact that the study of literature has an important function of training our sensibilities and cultivation of our minds, it has an enviable practical side and this has to be emphasised in the present circumstances.

I am afraid we are missing this important emphasis in the manner in which we are teaching English to our pupils through our various institutions of higher learning at present. Hence we need to reconsider the whole issue in the right perspective.

It is obvious that a large number of our pupils will be competing for the various examinations that are conducted by the various nationalised banks for the recruitment of various categories of employees such as clerks, typists or probationary officers, examinations that are conducted for the recruitment of Sales Tax Inspectors, Income Tax Inspectors etc., or even for the recruitment in the Indian Administrative Services etc. In all such examinations English is given great importance and the selection of candidates for these various posts depends to a large degree on their proficiency in English.

Secondly many of our pupils will be working as teachers or even lecturers where they will be required to use spoken or written English extensively. Or, again some of them shall be working as managers – or executives in business houses where the use of English has to be made.

In the context of the above situation if we were to ask ourselves what strictly vocational course there is in the typical college curriculum, the answer would be the acquirement of the ability to use English with felicity and ease. And the neglect on our part of this important aspect of language teaching could have serious implications for the future of our pupils.

Meaningful Language Teaching

What precisely are the steps that could be taken to make English language teaching meaningful to our pupils? As a first step, we should carefully study the syllabi

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**Head, Department of English, Adarsh Mahavidyalaya, Dhamangaon - 444709 (Maharashtra)* of these various competitive examinations and make suitable alterations in the syllabi of our undergraduate courses in respect of English. Thus, while preparing for their university examinations they will also be automatically preparing for the various competitive examinations. This arrangement will also provide the much needed motivation for the study of English to our pupils.

The second step should be to provide our pupils adequate opportunities for self-expression either spoken or written through the provision of seminars and group discussions and college magazines and wall papers. Students must be helped to stand on their own. They must be helped to develop self-confidence. There will certainly be resistance to this idea in the beginning but we have to take this hard step.

The third important step should be to restructure our undergraduate syllabi in such a manner that the students' speaking as well as writing ability is adequately tested. If there can be practical examinations in physics and chemistry, why should not there be a viva-voce in English? I know there are many difficulties in taking this step but we have to overcome these if we are to secure the adequate academic standards. At present we are merely testing the writing ability of our examinees and that too inadequately.

The fourth step should be to reduce progressively the proportion of textual study and increase the proportion of free composition in our undergraduate courses so that by the time the student graduates from the university he should have acquired an adequate command over this vital medium of communication.

Teaching English should pre-eminently be a vocational course which should aim at training the pupils in the basic skill of communication. If it could also inculcate certain values of life and exert a civilising influence on them that could be regarded as an added advantage.

Relation Between Actual Marks and Marks Expected

(Contd. from page 17)

Table 2 gives the percentage variation in marks with respect to expected marks. In some cases the variation is found to be very high. For understanding these large variations, the concerned students were interviewed. After the interview all the students were satisfied with the marks actually obtained and they accepted that they had ignored the small errors committed by them in the examination paper. Moreover, some of the students may not have been serious in giving the expected marks. The differences were also discussed with some senior professors and students. It was suggested that a better matching can be obtained if the distribution of marks for each question is given to the students before they give their expected marks.

This study is being conducted further to include other systems of examination/evaluation being followed by various institutions. It is expected that this type of study may help in generating more confidence in students towards evaluation in addition to a comparison between different examination and evaluation methods.

TABLE 2

Percentage variation in marks obtained with respect to expected marks

	Paper I		Paper II	
No.	Exam I	Exam II	Exam I	Exam II
1	0.0	15.0	-100.0	0.0
2	0.0	30.4	16.6	64.0
3	22.2	-14.3	-15.0	-53.3
4	-60.0	-62.5	0.0	-50.0
5	11.7	8.3	-16.6	6.2
6	-12.5	36.3	-80.0	40.0
7	0.0	12.5	25.0	33.3
8	0.0	7.7	63.6	41.6
9	35.3	12.0	25.0	46.6
10	26.6	28.6	60.0	22.2
11	33.3	6.2	-25.0	40.0
12	22.2	16.6	-14.2	40.0
13	9.5	-70.0	-25.2	-46.6
14	33.3	21.7	0.0	-50.0
15	50.0	3.7	58.3	30.7

Financing Higher Education

Shri Arjun Singh, Minister of Human Resource Development, Govt. of India, delivered the Convocation Address at the fourth annual convocation of the Goa University. He said, "While the Governments shall be lending support, to the extent possible, the Higher Education system will have to start thinking in terms of generating own resources. The solutions may vary from making the economically better off sections pay for the facilities of Higher Education, to forging closer links between the industry and the institutions, and a combination of such approaches". Excerpts

Education is not merely an acquisition of knowledge. It is the process through which deeper understanding and finer human qualities are synthesized in order to prepare good citizens. It is this appreciation of the truth of the process of education which the teachers must bear in mind as they take over the role of the guide and mentor of students from the latter's families. It is not as if this appreciation of synthesizing scholarship with humanism can stop at the level of the school. Indeed, it must continue in the colleges and universities.

It has been rightly reiterated that the education we impart must be socially relevant and need-based. The curriculum content of collegiate education has remained static for a long time. There is urgent need to revise and update the curriculum, particularly that at the undergraduate level, to make it more dynamic and relevant to the socio-economic needs of the country. Our curriculum must be so adapted as to make the young men and women entering our colleges useful to the society and confident to face the fast changing world around them. The National Policy on Education has recognised the organic link between Higher Education and social, economic, cultural, moral and spiritual issues facing humanity.

As state of the art technologies come to influence our daily lives, the realisation dawns that our conventional university system is perhaps not enough. The technical education imparted by the conventional university system, has been unable to keep pace with techno-economic progress. Consequently, a large number of students are denied contemporary opportunities and future options. Technical Education apart, even the curriculum in areas of humanities and social sciences need a closer look, from the point of view of how well these equip the students to appreciate and analyse contemporary national and international realities.

The system of Higher Education in our country is almost totally dependent on State funding. In spite of efforts by the Government of India and the State Governments, it has not always been possible to provide funds for all the demands from the university system. At the same time, there is a persistent and perhaps valid criticism that the prioritisation in allocating the limited resources should be for eradication of mass illiteracy and promotion of elementary and secondary education. As demands grow, the constraints of resources would be even more severe. While the Governments shall be lending support, to the extent possible, the Higher Education system will have to start thinking in terms of generating own resources. The solutions may vary from making the economically better off sections pay for the facilities of Higher Education, to forging closer links between the industry and the institutions, and a combination of such approaches.

I mention the facts of the resource crunch, only in order to remind the young men and women passing out today, of the sacrifice that the society has made in helping them acquire knowledge and proficiency. Undoubtedly, therefore, the society has great expectations from them – to protect and strengthen the democratic process and, further, to build the society on a strong foundation of economic, social and cultural values.

GULBARGA UNIVERSITY
GULBARGA
(Administration Branch)

No. GUG/ADM-/92-93/333 Dated: 24.4.92

CORRIGENDUM

Notification for Special Recruitment for SC/STs issued vide this office Notification No. GUG/ADM-I/91-92/6263 Dated: 30.3.92 Reader post for Physical Chemistry is advertised for ST, it should be read as SC.

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Alphonsa College, Pala,
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PRINCIPAL

IGNOU Convocation

Shri Arjun Singh, Union Minister for Human Resource Development announced in New Delhi recently that the distance education system would be expanded during the eighth five-year plan to absorb about half the additional number of students enrolled for higher education. Addressing the third convocation of the Indira Gandhi National Open University (IGNOU) the Minister said that it was the Government's attempt to democratise education so that people from all regions of the country could avail of the opportunity.

The current stress on universalisation of elementary education would inevitably lead to an increase in the demand for higher levels of knowledge. Keeping in view the expenses involved, financial limitations and the capacity of the conventional education system, it was imperative to turn to the distance education system.

Lauding the role of the IGNOU, he said that the open university system, with its flexible approach and innovative capabilities, could meet the demand for equality of opportunities in education that was assuming growing importance.

Mr. Singh commended the IGNOU for the initiatives taken by it in developing education programmes that were innovative and relevant to the needs of the economy.

A number of open universities had been set up in the country and an increasing number of universities were offering correspondence courses. The establishment of a Distance Education Council by the IGNOU was a right step to ensure coordination and determination of standards, the Minister said.

Prof. V.C. Kulandai Swamy, Vice-Chancellor of IGNOU, said that 4,114 candidates were being awarded diplomas and degrees at the convocation. He revealed that the university was now offering 26 programmes leading to the award of certificates, diplomas and degrees. It was proposed to introduce a number of new programmes next year including diploma in Hindi creative writing, postgraduate diploma in journalism and mass communication, master's degrees in distance education and library science.

He revealed that as many as 1,45,000 students were enrolled with the IGNOU which had 16 regional centres and 202 study centres all over the country.

Orientation Programme

The XX Orientation Programme of the Academic Staff College, University of Jodhpur, was inaugurated by Dr. B.S. Sharma, former Pro-Vice-Chancellor of Indira Gandhi National Open University, and at present, Professor in the Delhi School of Management, Delhi.

Reflecting on innovations in higher education Dr. Sharma emphasised that institutions were known not by the brick and mortar they used but by the people who headed them, and by the team they collected around them. What was needed today in all our institutions was to bring new ideas through innovations, he opined. He called upon the young lecturer-participants to accelerate and precipitate innovations in teaching and learning situations and said that it was an important responsibility of the Academic Staff College to train them in this direction. 'Though we are facing a severe economic crunch today', Dr. Sharma said and hoped 'through innovations we can achieve excellence. However, in doing so we should take into account the time, manner and specificity of the audience'.

Dr. Sharma, sadly felt that our teachers had become delivery oriented i.e. delivering whatever they had read or noted from stereotyped information sources. But all this must change. A teacher should innovate both organisationally and individually, and he should let his students know that he was interested in them, and should prepare his students to become innovative by setting personal examples.

Teaching, he said, was a missionary profession and a teacher was missionary whose pleasure was not reaching the end of the road but travelling life-long along the road. Quoting Rabindra Nath Tagore he said only that teacher could induce students to learn who himself had been a learner in his life.

Fourteen training methodologies were employed in the programme, namely – Microlab, Lecture-cum-discussion, Group discussion, Panel discussion, Brain storming, Behavioural Games, In-basket exercises, Experimental learning, Case study, Interactive video method, Book review, Reflect session, Workshop methods, Micro teaching and Problem solving exercises.

The valedictory address was delivered by Prof. R.N. Singh, former Vice-Chancellor, Sukhadia University, Udaipur, and presently Director, Poddar Institute of Management, Jaipur. In his address Dr. Singh said that the training obtained by participants in Academic Staff College should reflect in their work culture, personality and performance, both in and outside the class. "Your knowledge of the subject should be comprehensive, intensive and uptodate. Never bluff; try to live upto the expectations of your students. A teacher is constantly evaluated by them. Good students always look for something 'plus' in him or her for that which is not given in the prescribed textbooks or 'bazar' notes. It is important because a few of the teachers are not serious about their teaching these days. Therefore, be serious towards your responsibilities, and if you want to emulate – emulate the best in your department or in your college", he added.

Asking them to practically utilize the training, he said that "Though you may not be able to utilize all the 14 teaching methodologies practised here – due to constraints of time and resources – yet you should employ as many of them as you can. This will make your teaching more effective".

Dr. Singh cautioned against the apathy of the students, and said, "In every institution some of the students always come to learn. A good teacher having healthy respect for ignorance should be always willing to help those who come to learn. He is guided by the minority in the class in this respect, never going by majority of those who are not interested", and added "Always remember that knowledge is power. Hence, acquire as much knowledge as possible and become a powerful teacher – powerful in terms of influencing your students in a positive way – to earn respect of your students as well as of the society".

The programme was attended by 19 participants drawn from the different colleges of Bihar, Gujarat and Rajasthan.

More Vocational Courses

The government is planning to introduce more vocational courses keeping in view the employment opportunities that could be given to youths.

The centrally sponsored scheme of vocationalisation of secondary education, started in 1988, is currently being implemented in 27 States and Union Territories.

By the end of the Seventh Plan, 7,888 vocational sections had been approved with an enrolment capacity of 3.94 lakh students.

An important development has been the starting of courses specific to the needs of users to help in the employment of self-employment of students.

The CBSE has introduced such vocational courses in insurance in collaboration with the General Insurance Corporation and the Life Insurance Corporation.

A vocational course in railway commercial services and another in health services have been worked out with the respective departments.

An integral part of the vocational courses is the development of entrepreneurship. It has been decided that under the scheme of self-employment for educated unemployed youths, students who have completed the +2 level vocational courses would be given preference provided they fulfil other criteria of eligibility.

At the national level, a joint council of vocational education has been set up with the Union Education Minister as chairman. It lays down policy guidelines, plans and coordinates vocational programmes conducted by different organisations.

Third Afro-Asian Publishing Conference

The third Afro-Asian Publishing Conference was held in New Delhi. The theme of the conference was Publishing for Self-Reliance – Development and Promotion of Indigenous Literature. The Conference was inaugurated by the Chairman of the National Book Trust, India, Prof. U.R. Anantha Murthy.

Convened by the Afro-Asian Book Council, the Conference was attended by over 50 participants from 10 Afro-Asian countries viz. Bangladesh, China, India, Malaysia, Mauritius, Nepal, Pakistan, Singapore, Sri Lanka and Zambia. The representatives of 3 UN organisations, UNESCO, UNICEF and ILO also attended the Conference.

The Conference made far-reaching resolutions and action plans for the development and promotion of indigenous literature which include direct translation of outstanding works in different languages of Asia and Africa, participation in a number of book fairs and exhibitions, promoting the publication of encyclopaedia of the thinking of reformers and leaders in the Afro-Asian region, development of glossaries of technical and nontechnical terms, formulation of a draft national book policy and review of book development councils in the region, drafting of a regional copyright convention for Asia and Africa, removal of obstructions to the free flow of books and organisation of a training course for the book industry trainers.

HP Varsity Law Convocation

Mr. K.N. Singh, Chairman, Law Commission, called for establishment of law schools for research in legal and constitutional problems to help tackle issues arising out of the changed social and economic order. He was delivering the fifth law convocation address at the Himachal Pradesh University in Shimla recently. He said the law schools should be like scientific, technical and medical colleges which could not be considered efficient unless they carried out research.

Calling upon the universities to establish institutions where legal research could be carried out, Mr. Singh, a former Chief Justice of India, said such institutions had been established by some of the universities but those were not sufficient.

He said the Bar Council of India had set up a national school of law at Bangalore with a view to making the study of law a serious subject. It was exclusively devoted to legal education and provided five years study for LLB and facilities for research, he added.

Mr. Singh said since the study of law as a subject was in the interest of the nation, it was imperative for the Government to allocate reasonable share in large outlays of various plans made for the country's development.

Mr. Virendra Verma, Governor of Himachal Pradesh, who is also the Chancellor of the University, presided over the function and awarded degrees to 14 LLM and 100 LLB scholars.

Attracting Talent to Chartered Accountancy

The Institute of Chartered Accountants of India is reported to have decided to throw open the Chartered Accountancy (C.A.) course to those who have passed Senior Secondary or an equivalent examination (10+2), with the launching of a foundation course for such aspirants this year.

The one-year foundation course would enable students to join at the comparatively young age of 17 or 18. After its successful completion they can undergo practical training for the ensuing three years, and subsequently appear for the Intermediate and Final C.A. examinations.

Students who have appeared for their 10+2 or equivalent examination can also provisionally have themselves registered for the course, but the confirmation of registration would be subject to their producing the proof of passing in the next six months.

Besides, those presently doing their graduation, as well as graduates and postgraduates in certain disciplines like fine arts can also join for the foundation course. Certain other categories of graduates have been exempted from the need.

The twin objectives behind its decision to launch the course, which is also the first of its kind in the country : to attract talented young people into the profession at a younger age, and to provide an adequate foundation for assimilation of professional knowledge in the field.

The course would comprise four subjects : Fundamentals of Accounting, Mercantile Law, Mathematics and Statistics and Economics. Students of the course are compulsorily required to undergo postal tuition with the Board of Studies of the Institute, and can also attend colleges and schools accredited by the Institute for this purpose. To clear the foundation examination at the end of the 12-month term, the students need to score 50 per cent marks in the aggregate for the four papers.

The registration fee and postal tuition charges this year for the first foundation examination slated for June 1993 is Rs. 750. The last date for registration is May 31, 1992.

Big Boost for Biotechnology

The Central Government is reported to have selected 25 universities to give major thrust to biotechnology. According to Dr. S. Ramachandran, Secretary, Department of Biotechnology, Government of India, these universities would be developed as models for inter-disciplinary interaction among educationists, scientists, researchers and industrialists at various levels.

Delivering the inaugural address at a symposium on "Commercialisation of Biotechnology" organised by the School of Biotechnology at the Thapar Institute of Engineering and Technology, Dr. Ramachandran said the expertise from diverse fields needed to be pooled to answer multifarious problems in the fields of medicine, agriculture, environment and mining. First priority should be given to the restructuring of the education system in the country to make it cater to the needs of the country. India had great natural assets and there was need for paying sufficient attention to their proper exploitation.

Dr. T.R. Anantharaman, director of the Thapar Institute of Engineering and Technology, said the Indian economy was at the cross-roads, abandoning its traditional Socialistic path and trying to merge with the global economy.

International Women's Day

The Centre for Women Studies of Gulbarga University organised three-day celebrations of International Women's Day. Inaugurating the celebrations Dr. N. Rudraiah, Vice-Chancellor, Gulbarga University, lauded the work of the Centre and pledged his support for the development of women in these backward districts of Hyderabad, Karnataka area.

As part of the celebrations an art exhibition, a book exhibition and a seminar on "Women's Issues and their Solutions" were organised. Topics discussed at seminar included Personal Laws and Uniform Civil Code for Women, the Role of Women in Dowry Prohibition, Muslim Women and Education, and Problems of Working Women and Housewives.

Delivering the valedictary address Shri Vinay Kumar, Divisional Commissioner, Gulbarga Division, appreciated the various issues discussed in the seminar and promised to send the recommendations of the seminar to the Government for implementation. Dr. S.P. Hiremath, Chairman, Department of Chemistry, who presided, called upon the Centre to organise such activities in rural areas, where 70% of the women of our country resided.

Cultural Excellence Scholarships

The Banaras Hindu University (BHU), Varanasi, has instituted a number of scholarships for cultural excellence, based entirely on the performance of the university youth artistes in the AIU Inter University Zonal and National Youth Festivals. Seven such scholarships for the session 1990-91 and five for 1991-92 tenable for ten months were awarded at the recently concluded get-together of the organisational support personnel of the Inter Varsity National Youth festival at BHU.

The Banaras Hindu University has been successfully hosting the Inter-University Zonal and National Youth Festivals under the aegis of the Association of Indian Universities (AIU) and Deptt. of Youth Affairs & Sports, Ministry of Human Resource Development, for the past three consecutive years.

Recent Trends in Educational Technology

The All India Association for Educational Technology will organise an International Conference on Recent Trends in Educational Technology on November 5-8, 1992, at Ahmedabad. The conference will provide a forum for dissemination of research, innovation, and developments, discussion and exploration of ideas for application of educational and training technologies. While the focus of discussion would be on Recent Trends in Educational Technology, the other sub-themes to be debated at the conference include (1) Instructional Design : Systems Approach, (2) Audio Visual Aids and Media, (3) Computer Aided Educational Technology, (4) Open Learning, and (5) Research and Innovations.

Further details may be had from Dr. Binod C. Agrawal, Chief Scientist, Social Research Group, D.E.C.U. Indian Space Research Organisation, S.A.C. P.O. Ahmedabad - 380053.

Prof. Anita Banerjee

Prof. Anita Banerjee, professor of economics at Jadavpur University, Calcutta, has been elected visiting fellow by the College Council of Wolfson College, Cambridge University.

Prof. Banerjee won her Tripos in Economics from Cambridge University and has been a Cairnes Prize Fellow of Girton College at the university. She has also been a member of the Political Economy Club there. Prof. Banerjee has also been a Hawkins Gold Medalist at Calcutta University and later a Smith-Mundt scholar at Harvard University.

A former member of the University Grants Commission (UGC) and a UGC national fellow in economics, Prof. Banerjee's specialisation is public economics and economics of public choice. At present she is directing projects in economics of education, gender discrimination and the urban informal sector and also writing a monograph on law and economics.

Inlaks Scholarships

The Inlaks Foundation offers interesting options to those students wishing to do undergraduate and graduate courses at Oxford, Cambridge, the London School of Economics and the Imperial College of Science and Technology.

The foundation offers scholarships in many subjects, including in humanities, arts and communications (radio, television and journalism) for selected candidates. Projects linked to Indian issues are given preference.

Candidates must be below 28 and should possess degrees from a recognised university. Those who are first-timers, and have not had the experience of studying abroad, are given preference.

Application forms are available from July 1 to August 30 at the Inlaks Scholarships, P.O. Box 2108, New Delhi.

Narlikar Award

The Indian National Science Academy (INSA) is reported to have decided to institute the V.V. Narlikar Memorial Lecture Award for significant contributions in the field of applied mathematics in memory of the eminent mathematician Professor V.V. Narlikar.

The award consisting of a medal and cash of Rs. 25,000 will be given once in three years to distinguished mathematicians.

World Neem Conference

A World Neem Conference will be held on 24-28 February, 1993, in Bangalore. Sponsored by the Indian Council of Agricultural Research, New Delhi, in collaboration with I.T.C. Limited, Calcutta, the conference will focus on Neem and Environment. The other subjects proposed to be discussed include (1) Sustainable agriculture, (2) Neem in IPM, (3) Botany, Silviculture and production, (4) Chemistry, (5) Neem Industry – Commercialisation, (6) Neem – Non traditional applications, and (7) Other botanicals.

Further details with regard to participation and presentation of papers may be had from Mr. T.S. Subramaniam, Conference Secretariat, "World Neem Conference", Agricultural Research Centre, ITC Ltd. International Business Division, 7th Floor, Amrutha Topaz, Somajiguda, Hyderabad - 500482, (A.P.) India.

News from Agricultural Universities

PAU Plans New Courses

Punjab Agricultural University has decided to introduce Ph.D. programmes in agrometeorology, agricultural industrial processing, mechanical engineering, physics and home management, besides introducing new Masters programmes from the academic year 1992-93.

According to Dr D.S. Sidhu, Dean, Postgraduate Studies, a Ph.D. programme in mechanical engineering will not only serve the academic need for highly qualified teachers but also help update knowledge among the faculty.

Agricultural meteorology has great utility in raising crop production. Persons trained in the subject will take up various assignments of teaching, research and extension in agricultural universities, research institutes, State agricultural departments and in the Indian Meteorological Department. Personnel involved in extension work can make the farmers weather conscious for planning their operations. They will carry observations of the greenhouse effect and laboratory findings to the farmers to tell them about the changes in the climate and how to adjust their methods for better crops and more food.

The university has already introduced a one-year postgraduate diploma in computer science. A one-semester computer science course for the faculty members of the university is also proposed to be introduced.

CIMMYT Scientists Visit PAU

A 14-member team of the Board of Trustees and scientists of the International Maize and Wheat Centre (CIMMYT), Mexico recently visited the Punjab Agricultural University (PAU).

During the course of discussion with the faculty members of PAU, Dr Peter Rodney Day (England), leader of the team as also Chairman of the Programme Committee, expressed concern over the yield of wheat and maize and their sustainability. He advised the PAU scientists to come forward with their problems and programmes so that CIMMYT might reorient its research according to such needs. The water problem was also discussed at length.

The members stated that the rust screening work in PAU was one of the best. Research on the Karnal Bunt disease and triticale was also highly appreciated. One of the members hoped that with this visit the collaboration and exchange of research material with CIMMYT would increase.

The Advanced Centre for Wheat Research and Training was also inaugurated. This centre will train scientists from wheat-growing States of the country.

CIMMYT is an internationally funded non-profit, scientific research and training organisation, engaged in world-wide research on maize, wheat and triticale with emphasis on food production in developing countries.

News from UGC

Countrywide Classroom Programme

Between 18th May to 23rd May 1992 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 1.00 p.m. to 2.00 p.m. and 4.00 p.m. to 5.00 p.m. The programme is available on the TV Network throughout the country.

1st Transmission

1.00 p.m. to 2.00 p.m.

18.5.92

"A Voyage into Matter"
"Social Market Economy : A German Experience"
"Saffron Saga"

19.5.92

"Contract Act - III"
"Innovation : Our Aching Backs"

20.5.92

"Biotechnology : The Future"
"Tropical Cyclones - I"
"The Pest Story - I"

21.5.92

"Computer Network - III : The OSI Model
"Pillars of Society"
"The Pied Piper of Wimpole Street - II"

22.5.92

"We, The People - IV : Human Dignity and Fraternity in the Constitution"
"Angelus Pacis (The Angel of Peace)"

23.5.92

"A Garden for you - I"
"Setting the World Record"
"The Week Ahead"

IInd Transmission

4.00 p.m. to 5.00 p.m.

18.5.92

"What Causes Magnetism?"
"India's Industrial Policy"
"Training Course for the Opthalmologist"

19.5.92

"Reactive Polymers : Uses and Applications"
"Education for Equality - I"
"The Way of Healthy Life"

20.5.92

"Chromatography Techniques"
"Lubeck : Portrait of a City"
"Pond of Plenty"

21.5.92

"Electronics - II : What is a Transister"
"Self Development - II"
"Indian Literary Sensibility"

22.5.92

"India in Space : Achievements of Targets"
"Signs and Communication"
"Tackling Malaria in Orissa"

23.5.92

"The Hand that Creates - IV : History of Art-II"
"Odissi - The Art of Expression - III : Pallavi and Moksha"
"The Week Ahead"

Inter-Varsity Consortium on Educational Communication

The University Grants Commission is reported to have cleared a proposal for setting an Inter University Consortium on Educational Communication (IUCEC) in order to give structural support to the various activities presently undertaken by the Educational Medical Research Centres (EMRCs) and Audio Visual Research Centres (AVRCs).

The Media Centres (seven EMRCs and seven AVRCs), which were set up at the instance of the task force constituted by the Commission in August 1982 to plan the infrastructure for making education TV programmes, have so far produced more than 2,400 programmes for UGC Countrywide Classroom activity.

The Inter University Centre will however not have any programme production facility of its own but would work as a link between EMRCs/AVRCs and Doordarshan for transmission of UGC programmes. It will develop a library of audio-visual material and develop as a forum for bringing together professionals, academics and users.

Another important function of the Centre would be to act as a coordinating agency for EMRCs/AVRCs so that all of them together take up production of programmes in all the desired areas without wastage of efforts in duplication. The Centre will also act as a nodal agency for marketing of audio-visual cassettes produced under the aegis of UGC.

Gyan Vigyan Samiti

The UGC is reported to have extended its affiliation to Gyan Vigyan Samiti Assam (GVSA). Under this scheme teachers from affiliated colleges and also from universities desirous of working for GSVA in Total Literacy Campaign (TLC) will be deputed by UGC to GVSA. They will continue to draw their salaries from their original institutions. The college or university can appoint temporarily teachers in place of such persons and the UGC will bear the cost of salaries etc.

Crystal Growth Centre

The Crystal Growth Centre, Anna University, Madras, has succeeded in growing the high-tech Indium Phosphate single crystal of two inch diameter and one kilogram weight after one year of intensive research and development efforts. Indium Phosphate crystals have critical technological applications in fibre optics, optoelectronics and communication. Practically no other university system anywhere in the world has made this frontline achievement so far.

Developed by the UGC as an inter-university centre with an initial financial outlay of Rs. 1.5 crore, the Centre is at present engaged in growing three other significant crystals viz., Indium Antimonide, Potassium Dihydrogen Orthophosphate and Ruby which find extensive applications in space and laser device technologies.

In 1989, the Centre achieved a major breakthrough by successfully growing for the first time in India a Gallium Arsenida single crystal which has potential applications in the fields of microelectronics, fast computers, optoelectronics and defence optical communications. With this achievement India became the eighth country in the world with established crystal growth technology, other seven countries being the U.S.A., the U.K., Japan, France, Germany, Italy and China.

Teaching through Hindi

The UGC has agreed to provide an allocation of Rs. 10.00 lakhs annually for the activities relating to change over in the medium of instructions in law and other professional subjects in the universities and colleges in the Hindi-speaking States for organisation of workshops, training camps, purchase of books and journals, preparation of books, reading materials and for preparing question papers in Hindi, etc.

Hari Om, Pranavananda Awards

The UGC invites nominations from the Vice-Chancellors of the universities, professors of the university departments, research institutions, national laboratories and heads of their divisions, professional societies, national organisations, earlier awardees, eminent persons, etc. for the following categories of awards of Rs. 10,000/- each instituted by the UGC with the help of endowment made by Hari Om Trust, Nadiad, and Swami Pranavananda Saraswati, Director, Yoga Society, America.

Hari Om Trust Awards for the years 1987, 1988, 1989, 1990, 1991 and 1992 :

Sir C.V. Raman Award for Research in Physical Sciences.

Homi J. Bhabha Award for Research in Applied Sciences.

Meghnad Saha Award for Research in Theoretical Sciences.

Award to outstanding Scientists/ Social Scientists in the field of Interaction between Science and Society.

Swami Pranavananda Awards for the years 1989, 1990, 1991 and 1992:

Swami Pranavananda Award in Education.

Swami Pranavananda Award in Sociology.

Swami Pranavananda Award in Economics.

Swami Pranavananda Award in Political Science.

Swami Pranavananda Award in Environmental Science and Ecology.

The nominations may be sent to the Secretary, University Grants Commission, Bahadur Shah Zafar Marg, New Delhi-110002, latest by 31st May, 1992, in the prescribed proforma obtainable from Commission's Office.

COMMUNICATION

A Matter of Shame

Three Indian Universities asked me, some years ago (in the late 1980s), to read and evaluate doctoral dissertations. They promised to pay a nominal sum, about $75 for each dissertation, as I recall. Because I am an admirer of the efforts made by Indian universities to improve the educational qualifications of students in English, I performed the duty conscientiously, and, I hope, assisted the advisory committees in their deliberations.

Altogether I read some seven dissertations. Four of them paid the honorarium only after considerable delay (more than a year in two cases), and only after I felt myself forced to write letters of inquiry. The last three dissertations were read and evaluated, but the honoraria were never paid. Moreover, the mailing charges for returning the dissertations to their respective universities were never reimbursed, and I paid these from my own pocket.

The sum total of the honoraria and the mailing charges was not important, but it became increasingly obvious, over a four-year period, that the universities involved were imposing, unfairly, on the time and energies of university professors in other countries, and that indeed something unethical was going on. As a consequence, I regretfully declined the opportunity to read and evaluate some more dissertations. I was also bothered by the fact that not one of the universities wrote to thank me for having taken the time to write detailed critiques of the dissertations I had examined. Failing to do so struck me at the time (and still does) as a breach of manners.

Harold Orel,
University Distinguished Professor,
Department of English,
The University of Kansas,
3116 Wescoe Hall, Lawrence,
Kansas 66045-2115.

SOCIETY OF PILAR
FR. AGNEL COLLEGE OF ART & COMMERCE
PILAR. GOA : 403 203

Applications with full bio-data are invited for the following posts, so as to reach the Principal within 15 days from the date of publication of this advertisement :

1.	History	part-time
2.	Sociology	part-time
3.	Political Sc.	part-time
4.	Financial Manag & Accountancy	part-time
5.	Business Law	lecture basis
6.	Commercial Geography	lecture basis
7.	Mathematical Tech. & Stat	lecture basis
8.	Konkni	lecture basis
9.	Hindi	lecture basis
10.	Librarian	full time
11.	Director of Physical Educ.	full time

Minimum Qualifications :

1) For all the posts, postgraduate degree in the respective subject with more than 55%. This applies also to postgraduate degree in Library Science and Physical Education;

2) The postgraduate degree should be with eight or six papers, in the relevant subject;

3) Good academic record with at least 50% in the relevant subject at the undergraduate level. All three examinations of SSC, HSSC and graduation may be considered, if required.

4) For the post No. 5, Master degree in Law or a bachelor degree in law, at least with five years of practice.

5) For the post No. 10, Master degree in Library Science with at least 55% marks or a postgraduate degree with at least 55% marks and a bachelor degree in Library Science with a second class.

6) For the post No. 11 Master degree in Physical Education with 55% marks and diploma in sports coaching from a recognised institution OR a record of having represented the University at the inter-state or inter-university championship.

Pay-scales :

Rs. 2200-75-2800-100-4000 plus admissible allowances.

Applicants who are already employed shall forward their applications through proper channel and shall account for any break in their academic career. Candidates applying for the posts have to pass the eligibility test conducted by the UGC. However if such candidates are not available, other candidates may be considered for appointment, purely on temporary basis.

All applications must be accompanied by certified copies of marks sheets of all examinations from SSC onwards.

A Valuable Contribution

B.G. Verghese*

S.P. Sathe. The Right to Know. Bombay, Tripathi, 1991. Pp. 58. Rs. 50.

The freedom of the press has in recent years gained a salience and support it perhaps did not enjoy during the early years of Independence. Censorship during the Emergency (1975-77) proved highly educative of the vital importance of the fundamental right to freedom of speech and expression (from which freedom of the press derives) to the enjoyment of all other fundamental rights. The censorship of the judiciary and of parliament, let alone of lesser institutions and mortals, drove home the point. With censorship, even the illegal, quite apart from the illegitimate, was made to prevail. No wonder then that in the years following the Emergency, actions that might derogate from the freedom of the press have been stoutly opposed not just by the media but by the public at large, cutting across all political and sectoral barriers. Opposition to the Centre's Defamation Bill some years ago and the preceding Bihar Press Bill, to curb what was described as scurrilous writing, evoked country-wide protests. Both measures were dropped.

But even within the press and among those who should know better, there has long persisted the false notion that freedom of the press is a proprietorial or editorial right, which it is, but only in a limited sense. The broader right to freedom of the press and, indeed, its essence, is the reader's or public's right to know. The media is only the professional vehicle or custodian of that larger right and is therefore bound by a corresponding duty to purvey as fairly and objectively as it can the truth of an event being reported. Views, of course, are another matter.

The people's right to know, however, does not stop with only that which the media purveys, although that normally accounts for the largest part of what people are concerned with from day to day. Information is wider than news and there is a whole range of information that people need to have to order their lives and work more effectively and productively or to protect their interests. This is more so in any open or democratic society in which the people are notionally sovereign and can and must hold the government or others in authority accountable for acts of omission and commission.

The right to information has therefore come to be recognised as a basic human right in a variety of international convenants and, increasingly, in national jurisprudence.

Professor S.P. Sathe did well to focus on what is nevertheless yet a newly-emerging right in his Fifth Campus Law Centre Endowment Lectures at Delhi University in 1990. These have now been brought together in a little volume entitled "The Right to Know".

Knowledge is power and has always been so and it is therefore no surprise that rulers of every hue have, throughout history, sought to monopolise information, revealing as little as possible of their actions, especially if controversial or gross, and, on the other hand, seeking to gather as much information about others, internally and beyond their realm, through intelligence operations so that they might confound their enemies and rivals in war or nip in the bud 'palace' intrigue. Governments have therefore doled out propaganda and public information on the basis of people's 'need to know', a limiting doctrine in which the ruler reserves the right to withhold sensitive information. This is the regime that most widely prevails throughout the world and falls short of the right to know which is a concept that is now coming into its own.

India is signatory to the UN Declaration of Human Rights, the International Convenant on Civil and Political Rights and other instruments that prescribe the right to information which is the right to know. But domestic legislation and practice falls far short of this right. It was the National Front government that first articulated the right to know in the Indian context and promised to introduce a Freedom of Information Act while simultaneously amending the existing Official Secrets Act which has long set the governing norm. That declaration and the preliminary consultative steps taken by Mr. V.P. Singh's government in that direction stimulated debate on the subject to which Prof. Sathe has made a valuable contribution.

Prof. Sathe is strongly in favour

**Fellow, Centre for Policy Research, New Delhi - 110 021.*

of the right to know. But he rightly argues that without the right to universal education/literacy (in which India has singularly failed despite a Constitutional Directive), the right to know will have little meaning. He notes that the Bombay Primary Education Act, as amended in 1963, provided that it shall be the duty of zila parishads to prepare a scheme for compulsory primary education with penalties for default. It was never enforced. He therefore urges that primary education must become a fundamental right and to that end the State must eliminate child labour.

Having said that and defined information as a resource for all that the Constitution guarantees as part of the right to life, Sathe advocates a constitutional amendment to confer the right to information on all citizens. Simple legislation is not seen as sufficient as it can be easily repealed as was the Press Council Act in 1976. At the same time, the list of reasonable restrictions on the freedom of speech, expression [Article 19(2)] and information should, Sathe insists, be expanded to include privacy. In his opinion, the right to privacy must go with the right to information, as intrusive invasion of privacy can do grave harm to the dignity and interests of honourable individuals. This is a view that will be widely accepted.

Sathe outlined a legislative strategy for India in this context. The amendments and legislation he proposes include mechanisms to review administrative decisions to withhold information, provide remedies against misinformation, confer autonomy on the electronic media, repeal the Official Secrets Act, repeal Sec 123 of the Indian Evidence Act, make it obligatory for governments to publish all laws and delegated legislation at a reasonable price and ensure their availability, disseminate information pertaining to public documents and public policy, and empower the Lok Pal to entertain allegations of unjust withholding of information by administrative authorities. The right to primary education and the right to privacy must also be embodied in the Constitution.

People in a democratic society have a right to insist on transparency in all decision-making processes. If "no taxation without representation" was a valid cry earlier, "no taxation without information" has assumed validity today, with reasonable exceptions. Villagers must have access to land records easily and conveniently, people must be informed about matters affecting their right to health and a good environment, or as consumers and job-seekers and to decisions affecting war and peace.

Prof. Sathe's book comes as a reminder that the debate has just started in India and the Right to Know has yet to be won. An informed public will be better equipped to join the struggle to achieve that right.

SMT. PARVATIBAI CHOWGULE CULTURAL FOUNDATION'S
COLLEGE OF ARTS AND SCIENCE
MARGAO, GOA

Applications with full bio-data are invited for the following posts so as to reach the Principal within 10 days from the date of publication of this advertisement.

Candidates applying for lecturer's post must have passed eligibility test for lecturership conducted by the UGC. However, if such candidates are not available, other candidates will be considered for appointment.

Applications must be accompanied with CERTIFIED COPIES of mark-sheets of all the examinations from SSC onwards.

1.	LECTURER IN ZOOLOGY (TEMPORARY FOR ONE YEAR IN LEAVE VACANCY)	1 Post
2.	LECTURER IN ECONOMICS (TEMPORARY FOR ONE YEAR IN LEAVE VACANCY)	1 Post
3.	LECTURER IN PORTUGUESE (ON LECTURE BASIS)	1 Post

Qualifications

a) A Master's degree of a recognised University in the relevant subject with eight papers and at least 55% marks **OR** its equivalent grade and good academic record.

b) **Desirable qualifications** : M.Phil. or Ph.D. degree in the relevant subject.

Sacles of Pay : Rs. 2200-75-2800-100-4000 plus admissible allowances as per rules.

Terms and conditions of service are those laid down by the Goa University, Directorate of Education, Panaji, and other competent authorities.

Applicants who are already employed shall forward their applications through proper channel and shall account for breaks, if any, in their academic career.

V.R. Shirgurkar
PRINCIPAL

ANNAMALAI UNIVERSITY

NOTIFICATION

Applications are invited for admission to the following courses for the academic year 1992-93.

	Cost of application form & Prospectus
1. M.A. Degree **Branches :** 1. Philosophy 2. Psychology 3. History 4. Political Science 5. Economics 6. English 7. Tamil 8. Sanskrit 9. Linguistics 10. Sociology 11. Population Studies 12. Development Studies 13. Applied Economics 14. Translation 15. Hindi Translation and 16. Gandhian Studies.	Rs. 40/-
2. M.Sc. Degree **Branches :** 1. Mathematics, 2. Statistics, 3. Physics, 4. Chemistry, 5. Bio-Chemistry, 6. Botany, 7. Zoology, 8. Geology, 9. Marine Biology & Oceanography, and 10. Coastal Acquaculture.	Rs. 40/-
3. M.Com. Degree. (Both English & Tamil Medium)	Rs. 40/-
4. B.Ed. Degree	Rs. 40/-
5. M.Ed. Degree	Rs. 40/-
6. Post-Graduate Diploma courses 1. Tourism, 2. Archieves Keeping, 3. Econometrics, 4. Gandhian Thought, 5. Ramalinga Philosophy, 6. Guidance and Counselling, 7. Corporate Secretaryship, 8. Applied Linguistics, 9. Insurance, 10. Public Administration, 11. Banking Law and Practice, 12. Population Education and 13. Statistics.	Rs. 40/-
7. Post M.Sc. Diploma Course in Hydrogeology	Rs. 40/-
8. Master of Library & Information Science (M.L.I.S.)	Rs. 40/-
9. Bachelor of Library & Information Science (B.L.I.S.)	Rs. 40/-
10. Certificate Course in Library Science	Rs. 20/-
11. Title of Isaikalaimani	Rs. 20/-
12. Title of Natanakalaimani	Rs. 20/-
13. B. Music	Rs. 20/-
14. Diploma Courses 1. Tamil, 2. Advanced Diploma for Proficiency in French, 3. French, 4. Linguistics, 5. Languages (Tamil, Telugu, Kannada, Malayalam, Snaskrit, Hindi), 6. Journalism and 7. Folklore.	Rs. 20/-
15. Certificate Courses 1. French, 2. Journalism, 3. Folklore, 4. Reprography and non-book materials, 5. Languages (Tamil, Telugu, Kannada, Malyalam, Snaskrit, Hindi), 6. English for Communication.	Rs. 20/-
16. B.P.E.S.	Rs. 40/-
17. M.P.E.S.	Rs. 40/-

The application form along with prospectus can be had from the REGISTRAR, ANNAMALAI UNIVERSITY, ANNAMALAINAGAR - 608 002 on payment of amount indicated against each course in person or by sending a Demand Draft drawn in favour of the REGISTRAR, ANNAMALAI UNIVERSITY payable on Indian Bank or Bank of Madura Ltd., at ANNAMALAINAGAR or State Bank of India at CHIDAMBARAM, along with a requisition and a self-addressed envelope of size 30 cm x 13 cm stamped to the value of Rs. 1.80 (for B.Ed. Rs. 6/-) with the name of the course for which the application form is required superscribed boldly on the envelope. The name of the course should be clearly indicated in the requisition letter. At the bottom of the back side of the Demand Draft name and address of the candidate and course asked for should be clearly indicated. The application form together with the prospectus will be issued from 06.05.1992.

The last date for receipt of filled in application by the University is **30.06.1992**.

The University will not be responsible for any postal delay.

No. K2/9/92
Annamalainagar
Dated: 02.05.1992

Dr. PR. Karpagaganapathy
REGISTRAR

Current Documentation in Education

A list of select articles culled from periodicals received in AIU Library during April 1992.

EDUCATIONAL PHILOSOPHY

Husen, Torsten. Idea of the university: Changing roles, current crisis and future challenges. **Prospects** 21(2), 1991, 172-88.

Nishikawa, Shunsaku. Profiles of educators: Fukuzawa Yukichi (1835-1901). **Prospects** 21(2), 1991, 287-96.

Plante, Patricia R and Atwell, Robert H. Opening of the American mind. **Ednl Record**(Winter) 1992, 33-6.

Saha, Lawrence J. Universities and national development: Issues and problems in developing countries. **Prospects** 21(2), 1991, 248-57.

Shils, Edward. Reflections on tradition, centre and periphery and the universal validity of science: The significance of the life of S. Ramanujan. **Minerva** 29(4), 1991, 393-419.

EDUCATIONAL PSYCHOLOGY

Ediger, Marlow. Creativity and the social studies. **Progress of Edn** 66(9), 1992, 198-201.

Singh, H I. Creativity: The unique gift to mankind. **Progress of Edn** 66(9), 1992, 202-5.

EDUCATIONAL SOCIOLOGY

Balch, Stephen H. Political correctness or public choice? **Ednl Record**(Winter) 1992, 21-4.

Eaton, Judith S. "PC" or not "PC": That is not the question. **Ednl Record** (Winter) 1992, 25-9.

Minsky, Leonard. Politics of political correctness. **Ednl Record** (Winter) 1992, 19-20.

Schott, Thomas. World scientific community: Globality and globalisation. **Minerva** 29(4), 1991, 440-62.

EDUCATIONAL PLANNING

Altbach, Philip G. Patterns in higher education development: Towards the year 2000. **Prospects** 21(2), 1991, 189-203.

Kalpande, V A. Self-evaluation as an aid to local area planning of education. **J of Ednl Planning and Admn** 4(4), 1990, 31-40.

Mangalagiri, Anjana. Structure and context of educational development: A comparative perspective. **J of Ednl Planning and Admn** 4(3), 1990, 1-15.

Nair, K R G. Planning for educational development at the local level: Some relevant aspects. **J of Ednl Planning and Admn** 4(3), 1990, 17-22.

Shafi, Zeenat S. Performance indicators in education system: A study of its uses and implications. **J of Ednl Planning and Admn** 4(4), 1990, 43-58.

WOMEN'S STUDIES

Dekhtawala, Pramila. Education for women's equality. **Progress of Edn** 66(9), 1992, 214-6.

Sutherland, Margaret B. Women and education: Progress and problems. **Prospects** 21(2), 1991, 145-55.

EDUCATIONAL ADMINISTRATION

De Fleur, Lois B. Intellectual leadership: A president's perspective. **Ednl Record**(Winter) 1992, 46-54.

Gamage, D Thenuwara and D'Cruz, J V. Universities of ancient Asia, Africa and Medieval Europe: Origins, administration and autonomy. **J of Ednl Planning and Admn** 4(4), 1990, 59-64.

McKinsey & Co. Interactive model of business/academia. **Industry and Hr Edn** 5(4), 1991, 223-7.

Padgett, Brian. Institute growth through technology sale. **Industry & Hr Edn** 5(4), 1991, 209-15.

Prasanna, Subbarayan and Valecha, Gopal K. Role of heads of institutions: A case of Indian Institutes of Management. **J of Ednl Planning and Admn** 4(3), 1990, 23-40.

Sharma, M M and Bhatia, B S. Status, powers and functions of the treasurer/finance officer/comptroller of universities in India. **J of Ednl Planning and Admn** 4(3), 1990, 59-65.

CURRICULUM

Mudroch, Vilem. Future of interdisciplinarity: The case of Swiss universities. **Studies in Hr Edn** 17(1), 1992, 43-54.

TEACHERS & TEACHING

Diekhoff, George M and Wigginton, Phil K. Faculty perceptions of college classroom environment . **Studies in Hr Edn** 17(1), 1992, 21-5.

Guri-Rozenblit, Sarah. Teachers as a special target population at the open university of Israel. **Open Learning** 7(1), 1992, 40- 5.

EDUCATIONAL RESEARCH

Laroui, Abdallah. University, research, development. **Prospects** 21(2), 1991, 240-7.

Schratz, M. Researching while teaching: An action research approach in higher education. **Studies in Hr Edn** 17(1), 1992, 81- 95.

EDUCATIONAL TECHNOLOGY

Chacon, Fabio. Taxonomy of computer media in distance education. **Open Learning** 7(1), 1992, 12-27.

ECONOMICS OF EDUCATION

Eicher, Jean-Claude and Chevaillier, Thierry. Rethinking the financing of post-compulsory education. **Prospects** 21(2), 1991, 258-75.

Groot, Win and Oosterbeek, Hessel. Optimal investment in human capital under uncertainty. **Eco of Edn Rev** 11(1), 1992, 41-9.

Panda, G S and Padhi, P P. Cost effectiveness in higher education: A case study. **J of Ednl Planning and Admn** 4(4), 1990, 71-6.

Shri Prakash and Chowdhury, Sumitra. Determinants of educational expenditure in India. **J of Ednl Planning and Admn** 4(4), 1990, 1-30

VOCATIONAL EDUCATION

Bradney, A. Ivory towers and satanic mills: Choices for university law schools. **Studies in Hr Edn** 17(1), 1992, 5-20.

ADULT EDUCATION

Paul, M C. Role of adult and continuing education. **Yojana** 36(6), 1992, 23-5.

DISTANCE EDUCATION

Dhanarajan, Gajaraj and Timmers, Shannon. Transfer and adaptation of self instructional materials. **Open Learning** 7(1), 1992, 3-11.

Groten, Hubert. Role of study centres at the Fernuniversitat. **Open Learning** 7(1), 1992, 50-6.

Kaye, Tony and Rumble, Greville. Open universities: A comparative approach. **Prospects** 21(2), 1991, 214-26.

Scriven, Bruce and Lundin, Roy. Open learning centres in Queensland, Open learning 7(1), 1992, 62-7.

THESES OF THE MONTH

A list of Doctoral Theses accepted by Indian Universities.

BIOLOGICAL SCIENCES

Environmental Sciences

1. Paramjeet Kaur. **Microbial decomposition of faecal wastes of selected wild herbivores and carnivores and its effect on the forest top soil.** Awadhesh. Dr Ugam Kumari Chauhan, Lecturer, Department of Environmental Biology, Awadhesh Pratap Singh Vishwavidyalaya, Rewa.

Biology

1. James, M E. **Studies on space-time variabilities of hydrometeorological parameters over Kerala State.** CUST. Dr H S Ram Mohan, Prof, School of Marine Sciences, Cochin University of Science and Technology, Kochi.

2. Rajapandi, T. **Molecular analysis of** Shigella **plasmids and plasmid encoded restriction modification system.** Madurai.

3. Srinivas, S. **Gene expression in higher eukaryotes: Regulation of expression of cell cycle specific genes in mouse embryo fibroblasts.** Madurai.

4. Suresh, V R. **Studies on the coral reefs of Lakshadweep.** CUST. Dr K J Mathew, Scientist, Central Marine Fisheries Research Institute, Kochi.

5. Venkita Raman, P R. **Physiological, cytological and biochemical studies on the eyestalk ablated penaeid prawns.** CUST. Dr P Sivadas, Asstt Director, National Institute of Oceanography, Kochi.

Biophysics

1. Bhattacharyya, Dhananjay. **Local variability and base sequence effects in nucleic acid structures.** IISc.

2. Choudhury, Devapriya. **Studies on the DNA binding and specificity of some synthetic non intercalators.** IISc.

3. Hiremath, Chaitanya N. **X-ray diffraction studies on belladonna mottle virus at 3.8 A resolution.** IISc.

4. Soman, Jayashree. **X-ray crystallographic studies on the effect of chirality on amino acid aggregation.** IISc.

5. Sridhar Prasad, G. **X-ray crystallographic studies on amino acid and peptide complexes of succinic acid.** IISc.

Biochemistry

1. Chidananda Sharma, S. **Studies on the regulation of synthesis and secretion of chorionic gonadotropin in first trimester human placenta: Role of calcium gonadotropin releasing hormone and estradiol - 17p.** IISc.

2. Damayanti Devi, Maibam. **Biochemical and genotoxic assessments in irradiated pineapples.** Manipur. Dr G J Sharma, Assoc Prof, Department of Life Sciences, Manipur University, Imphal.

3. Kanhaiya Lal. **Studies in poultry nutrition: Biochemical role of ascorbic acid in improving the quality of poultry products.** Panjab.

4. Najmul Islam. **Biochemical and immunological studies on DNA- lysine photoadduct.** AMU. Prof Rashid Ali, Department of Biochemistry, Aligarh Muslim University, Aligarh.

5. Omkumar, R V. **Inactivation of HMGCoA reductase by disulfides, hydrogen peroxide, silatrane and ubiquinone.** IISc.

6. Seetha Ratna Kumari, T. **Studies on microbial metabolism.** Kerala. Dr P A Kurup, Gouri Sadan, T C 4/1413, Kowdiar, Thiruvananthapuram.

7. Sisodiya, Divyaprabha. **Involvement of immune response and its biochemical correlation in various clinical manifestations of hepatitis B. virus infection.** Devi Ahilya. Dr R Vijayvargiya, Sr. Emeritus Scientist, T. Chauthram Hospital and Research Centre, Indore.

8. Tatu, Utpal S. **Stability and folding of a thermostable xylanase from** Humicola lanuginosa. IISc.

9. Ujwal, M L. **tRNA and 5S RNA genes of ragi,** Eleusine coracana. IISc.

Microbiology

1. Chiplunkar, Sujata Ajit. **Factors affecting the biosynthesis of B-carotene in the mold** Blakeslea trispora. Baroda.

2 Kanakalatha. **Production and characterization of monoclonal antibodies against animal filaria and their application for detection of antigen in human filarial sera.** Madras.

3. Pathak, Dharamvir. **Role of biotic factors in nodulation of rajmah,** Phaseolus vulgaris L. HAU.

Botany

1. Amin, Daxaben Mayankkumar. **Analysis of prominent varieties of edible oils and their impact on human diseases.** Patel. Dr I L Kothari.

2. Ampalli, R. **Study on certain air pollutants and plant pathogens interaction.** Vikram. Dr S K Chauhan.

3. Ankathil, Ravindran. **Chromosome abnormalities in human malignant neoplasms and their clinical significance.** Kerala. Dr J Stephen, Reader, Department of Botany, University of Kerala, Kariavattom and Dr D M Vasudevan, Prof and Head, Department of Biochemistry, Medical College, Thrissur.

4. Banerjee, Madhumita. **In vitro studies on two Himalayan gymnosperms:** Pinus gerardiana **Wall and** Ephedra gerardiana **Wall.** Delhi.

5. Fouzia Zareen. **Studies on experimental mutagenesis in** Brassica campestris **L var. Sarson Prain.** Osmania.

6. Jain, Manju Lata. **Persistence of pesticide and their effect on some agroecosystem components.** Vikram. Dr A Shevde, Lecturer, Department of Botany, Vikram University, Ujjain.

7. Lakshmi Narayana, A. **Studies on the microbial ecology of some polluted soils from Hyderabad, Andhra Pradesh, India.** Osmania.

8. Sree Rama Murthy, J. **Biosystematic studies on seven species and hybrids of the genus** Pennisetum **(L) Rich (Poaceae).** Andhra.

9. Uma Shankar. **Nutrient cycling in degraded ecosystems (grasslands) of Meghalaya.** NEHU. Dr R S Tripathi, Department of Botany, North Eastern Hill University, Shillong and Dr H N Pandey, Department of Botany, North Eastern Hill University, Shillong.

Agriculture

1. Ilangovan, R. **Studies on integrated weed management on weed dynamics and varietal screening for herbicide tolerance in wet- seeded rice.** T N Agrl. Dr S Purusothaman, Prof, Department of Agronomy, Agricultural College and Research Institute, Madurai.

2. Mehta, Neena. **Effect of sodium chloride and its interaction with GA3 on metabolism, growth and development of chickpea seedlings,** Cicer arietinum **L. Var.H-208.** HAU.

3. Pal, Jitendra. **Induction and evaluation of variants of** Pleurotus sajor-caju **(Fr.) Singer for yield and quality characters.** H P Krishi. Dr B M Singh, Dean, College of Agriculture, Palampur.

4. Rajasekaran, R. **Genetic analysis and inheritance of downy mildew and rust resistance in pearl millet,** Pennisetum glacum **(L) R Br.** T N Agrl. Dr S Palanisamy, Prof, Department of Plant Breeding and Genetics, Agricultural College and Research Institute, Coimbatore.

5. Ramayan Singh. **Studies on bacterial diseases of rice with special reference to bacterial blight caused by** Xanthomonas campestris **p v** oryzae **(Ishiyama) Dye.** Rajendra Agrl.

6. Ravjeet Kaur. **Biology and control of** Albugo candida **(lev.) Kunze causing white rust on crucifers.** PAU.

7. Sahu, Manendra Prasad. **Variation and variability in** Drechslera oryzae **Jain and Subramaniam.** Rajendra Agrl.

8. Sohu, Virinder Singh. **Studies of different sterile cytoplasms on seed set in hybrid rice.** PAU.

9. Umesh Kumar, N N. **Physiological studies of the mulberry varieties infected by foliar pathogens.** Bangalore. Dr M P Shree, Department of Sericulture, Bangalore University, Bangalore.

Zoology

1. Aggarwal, Rama. **On some aspects of metabolism in Ascaridia galli: Effect of certain anthelmintic drugs.** Panjab.

2. Bhardwaj, Dinesh Kumar. **Incidence of variations in the heterochromatin pattern of normal and diseased humans and those under environmental stress.** Panjab.

3. Chona, Mukesh Kumar. **Biomonitoring and ecological succession of industrial effluents of Chandigarh.** Panjab.

4. Devakinanda, Chebolu. **Primary productivity and related hydrographic parameters in Visakhapatnam Harbour.** Andhra.

5. Jaganathan, R. **An investigation on some aspects of circadian rhythms in a scorpion,** Macrochetes fergusoni **Pocook.** Madras.

6. Joshi, Pramod Kumar. **Fish blood parameters with reference to aquatic pollution and endocrine physiology.** Vikram. Dr A B Saxena, Prof, Department of Zoology, Vikram University, Ujjain.

7. Kakati, Prafulla Kumar. **Biology and bionomics of muga silk worm,** Antheraea assama **Westwood (Lepidoptera: Saturniidae) with special emphasis on its economy in North-East India.** Dibrugarh. Dr Ruma Handique, Prof, Department of Life Sciences, Dibrugarh University, Dibrugarh.

8. Paul, Amrit lal. **Distribution, ecology and biology of fresh water prawns** Macrobrachium **spp, of North Eastern region.** NEHU. Dr B K Sharma, Department of Zoology, North Eastern Hill University, Shillong.

9. Sahayaraj, K. **Bioecology, ecophysiology and ethology of chosen predatory hemipterans and their potential biological control.** Madurai.

10. Shaguftah, Nasreen. **Biology and ecology of some larvivorous fishes.** H S Gour. Dr S K Tiwari, Reader, Department of Zoology, Doctor Harisingh Gour Vishwavidyalaya, Sagar.

11. Sutharam, K K. **Studies on the role of certain hormones on energy metabolism in an apodan amphibia,** Gegenophis carnosus **Beddome.** Kerala. Dr Oommen V Oommen, Reader, Department of Zoology, University of Kerala, Kariavattom.

Medical Sciences

1. Ananda Theertha Varada, H K. **Bioactivation and cellular protective systems in the CNS.** Bangalore. Dr Vijayalakshmi Ravindranath, Assoc Prof, Department of Neuro-Chemistry, National Institute of Mental Health and Neuro Sciences, Bangalore.

2. Baskaran, Samuel Vinod. **Physical and clinical studies on two diagnostic methods: Radionuclide imaging and nuclear magnetic resonance spectroscopy.** Madras.

3. Guru, S C. **Effect of ethanol metabolism on cytoskeletal proteins.** Bangalore. Dr Taranath Shetty, Department of Neurochemistry, National Institute of Mental Health and Neuro-Sciences, Bangalore.

4. Rama Rao, D. **Bio-statistical studies on rabies in man.** Bangalore. Dr V G Kaliaperumal, Additional Prof and Head, Department of Bio-Statistics, National Institute of Mental Health and Neuro-Sciences, Bangalore.

5. Sharma, Parmeshwar Prasad. **A study on the antiasthmatic effect of arka-pushpa.** Gujarat Ayur. Dr J M Sharma, Reader, Gujarat Ayurved University, Gujarat.

6. Shirley, Anne Christine Telles. **Psycho-physiological effects of yogic practices in health and disease.** Bangalore. Dr T Desiraju,

ANNAMALAI UNIVERSITY

RAJAH MUTHIAH INSTITUTE OF HEALTH SCIENCES

ADMISSION TO B.P.T. COURSE - 1992-93
(BACHELOR OF PHYSIOTHERAPY)

NOTIFICATION

Applications are invited for admission to B.P.T. course for the academic year 1992-93. The application forms along with the prospectus can be had from the REGISTRAR, ANNAMALAI UNIVERSITY, ANNAMALAINAGAR – 608 002 on payment of Rs. 250/- in person or by post by sending a Demand Draft payable on Indian Bank or Bank of Madura Ltd., at ANNAMALAINAGAR or State Bank of India at CHIDAMBARAM in favour of the REGISTRAR, ANNAMALAI UNIVERSITY with a self-addressed envelope of size 30 cm x 13 cm affixing postage stamps to the value of Rs. 1.80 along with a requisition. At the bottom of the back side of the Demand Draft name and address of the candidate and course asked for should be clearly indicated. The application form together with the prospectus will be issued from 06.05.1992.

Last date for the receipt of filled in applications is **06.06.1992.**

The University will not be responsible for any postal delay.

No. K2/4/92
Annamalainagar
Dated: 02.05.1992

Dr. PR. Karpagaganapathy
REGISTRAR

ANNAMALAI UNIVERSITY

RAJAH MUTHIAH INSTITUTE OF HEALTH SCIENCES
RAJAH MUTHIAH MEDICAL COLLEGE

ADMISSION TO B.SC. (NURSING) COURSE - 1992-93

NOTIFICATION

Applications are invited for admission to B.Sc. (Nursing) course for the academic year 1992-93. The application forms along with the prospectus can be had from the REGISTRAR, ANNAMALAI UNIVERSITY, ANNAMALAINAGAR -- 608 002 on payment of Rs. 75/- in person or by post by sending a Demand Draft payable on Indian Bank or Bank of Madura Ltd., at ANNAMALAINAGAR or State Bank of India at CHIDAMBARAM in favour of the REGISTRAR, ANNAMALAI UNIVERSITY with a self-addressed envelope of size 30 cm x 13 cm affixing postage stamps to the value of Rs. 1.80 along with a requisition. At the bottom of the back side of the Demand Draft name and address of the candidate and course asked for should be clearly indicated. The application form together with the prospectus will be issued from 06.05.1992.

Last date for the receipt of filled in applications is **06.06.1992.**

The University will not be responsible for any postal delay.

No. K2/5/92
Annamalainagar
Dated: 02.05.1992

Dr. PR. Karpagaganapathy
REGISTRAR

CLASSIFIED ADVERTISEMENTS

KARNATAKA REGIONAL ENGINEERING COLLEGE,

SURATHKAL (D.K.)
P.O. SRINIVASNAGAR-574 157,
KARNATAKA STATE

No. 5295/Estt/1992/B1

ADVERTISEMENT

Applications in the prescribed form are invited for the following posts on or before **15.6.1992**.

I. PROFESSORS
- (a) Undergraduate :
  - 1) Electrical Engg (1)
  - 2) Computer Engg (1)
  - 3) Mathematics (1)
- (b) Postgraduate :
  - 1) Power & Energy Systems (Electrical Engg. Dept.) (1)
  - 2) Applied Mechanics (1)

(Scale of pay Rs. 4500-7300)

II. ASSISTANT PROFESSORS
- (a) Undergraduate :
  - 1) Electrical Engg. (1)
- (b) Postgraduate :
  - 1) Geo-Technical Engg. (Dept. of Civil Engg.) (1)
  - 2) Power & Energy Systems (Dept. of Electrical Engg.) (1)

(Scale of pay Rs. 3700-5700)

III. WORKSHOP SUPERINTENDENT
- (a) Undergraduate:
  - 1) Mechanical Engg. (1)

(Scale of pay Rs. 3000-4500)

IV. LECTURERS
- (a) Undergraduate:
  - 1) Civil Engg. (1)
  - 2) Applied Mechanics (1)
  - 3) Electrical Engg. (1)
  - 4) Electronics & Commns. Engg. (1)
  - 5) Mechanical Engg. (2)
  - 6) Chemical Engg. (1)
  - 7) Metallurgical Engg. (2)
  - 8) Mathematics (2)
- (b) Postgraduate:
  - 1) M.C.A. (2)

(Scale of pay Rs. 2200-4000)

V. PLACEMENT, TRAINING & STUDENTS WELFARE
- 1) Assistant Proctor (1)

(Scale of pay Rs. 700-1300 - Pre-revised Central scale)

VI. PHYSICAL EDUCATION
- 1) Assistant Physical Director (1)

(State Scale of pay Rs. 1400-2750)

All the above posts carry D.A. and H.R.A. according to Karnataka State Government rules.

In the cadre of Lecturers; 15% reservations for SC and 7 ½% for ST candidates as per college rules will be made.

Applications forms and details of qualifications and experience required for the above posts can be obtained from the Registrar, Karnataka Regional Engineering College, Surathkal, by sending crossed Indian Postal Order for Rs. 25/- (for SC/ST Rs. 6.00 only) drawn in favour of "The Principal, Karnataka Regional Engineering College, Surathkal" payable at Srinivasnagar Post Office along with a self-addressed envelope of size 25x10 cms. affixed with postage stamps of Rs 3.00. Applications received on plain paper and after the last date prescribed will not be considered.

N.R. Shetty
PRINCIPAL

REGIONAL ENGINEERING COLLEGE

ROURKELA : 769008 (ORISSA)

Advertisement No. 1/92 Dated. 27.04.92

Applications in prescribed form (in duplicate) are invited for the following faculty positions :

I. **PROFESSORS** : Scale : Rs. 4500-150-5700-200-7300 plus allowances.

- (a) Computer Science, Engineering and Applications with – A good general background in Computer Science and Engineering/Computer Applications with knowledge of Computer-based applications in related fields.
- (b) Metallurgical Engineering (Temporary against leave vacancy) (Materials Science/Ferro Alloys)
- (c) Chemistry (Inorganic Chemistry)

II. **LECTURERS** : Scale : Rs. 2200-75-2800-100-4000 plus allowances.

- (a) Computer Science, Engineering & Applications (Computer Science/ Computer Engineering/Computer applications);
- (b) Mining Engineering (Temporary against leave vacancy) (any branch of Mining Engineering)
- (c) English

The posts carry Dearness Allowance at State Govt. rates.

QUALIFICATIONS & EXPERIENCE

AICTE norms of qualification and experience as of University level Postgraduate Engineering College standard. Preference will be given to SC/ST/Physically handicapped candidates, who are otherwise considered qualified. Candidates abroad may apply on plain paper giving full bio-data. Authorities reserve the right to make a short listing of the applicants to be called for interview.

Total monthly emoluments at the starting point as at present rates are : PROFESSOR Rs. 6285/- and LECTURERS Rs. 3520/-. Candidates who at the time of recruitment possess Master's and Doctoral degree in Engineering/ Technology shall be granted 2 and 4 advance increments, respectively; Candidates, who possess M.Phil and Ph.D degree in Science and Humanities shall be granted 1 and 3 advance increments, respectively.

Further details regarding qualification, experience, specialisation, other benefits etc., prescribed for the posts and prescribed application forms will be available from the undersigned on payment of Rs. 15/- in shape of Crossed Bank Draft in favour of "Principal, Regional Engineering College, Rourkela-8" payable at the State Bank of India, R.E. College Campus Branch, Rourkela-8, enclosing a self-addressed envelope 23 cm x 10 cm in size with postage stamp worth Rs. 2.00. The last date of receiving completed application is **28th May, 1992.**

N.C. Mohanty
REGISTRAR

INDIRA GANDHI INSTITUTE OF PHYSICAL EDUCATION AND SPORTS SCIENCES

BLOCK-B, VIKAS PURI
NEW DELHI-18

Applications are invited on plain paper (giving Name, Father's name, Date of Birth, Academic qualifications, Experience, present employment with emoluments, minimum acceptable pay, permanent address and attested copies of all testimonials, caste certificate (in case of SC/ST candidates) and latest passport size photograph) – for the following posts so as to reach the undersigned by **30th May, 1992.**

1) **Lecturers** (Pay Scale Rs. 2200-4000) – one each in Hindi, English, Physical Education (Gymnastics & Yoga).

Qualifications

(a) A Doctorate degree or Research work of an equally high standard in the concerned subject.

(b) Good academic record with atleast second class (C in the seven point scale) Master's degree from an Indian University or an equivalent degree from a foreign University in the relevant subject of study.

Desirable for Lecturer in Physical Education :

(a) Diploma in coaching Gymnastics and/ or Yoga from a recognised institution.

(b) Participation at Inter-Univ. or Inter-state sports competitions.

2) **Medical Officer (One)**
Pay Scale Rs. 2200-4000 + NPA

Qualification

MBBS from a recognised University with 3 years' exp., candidates with postgraduate qualifications or Hospital/Sports Medicine exp. will be preferred.

3) **Librarian (One)**
Pay Scale Rs. 2200-4000

Qualification

Good academic record with atleast IInd class (C in the seven point scale) Master's degree in Library Sc./Information Science/Documentation or an equivalent professional degree.

OR

Good academic record with atleast IInd class (C in the seven point scale) Master's degree in Arts/Science/Commerce or equivalent degree in Library Science/Information Science/Documentation or an equivalent professional degree.

4) **Section Officer (A/C) (One)**
Pay Scale : Rs. 2000-3500

Qualification:

(a) A Master's degree or L.L.B. or Post Graduate diploma of Two Years duration in any of the fields of Public Admn./Management/Computer Application of a recognised University or its equivalent.

(b) Atleast three years' experience in Supervisory or Equivalent Cadre in a Univ./Educational or Research Institution.

(c) Those who have teaching or research experience alongwith proven administrative capabilities are also eligible to apply.

5) **Senior Personal Assistant (One)**
Pay Scale Rs. 2000-3500.

Essential

(i) Must have passed a degree examination from a recognised University or Equivalent thereto;

(ii) Candidates will be required to qualify the tests such as: Shorthand test (English) (a) 120 w.p.m. and typing test (English) 40 w.p.m.

(iii) Candidate should have worked as Stenographer or Personal Assistant for a minimum period of five years.

Desirable Qualification

Experience in an Educational Institution.

6) **Library Attendant (Two)**
Pay Scale Rs. 800-1150.

Essential

Matric/Hr. Secondary

Desirable

Certificate in Lib Science.

Peon (Two Posts) : Pay Scale Rs. 750-940

Qualification

8th class passed from recognised school or institution.

Mali (Two Posts) : Pay Scale Rs. 750-940

Qualification

Elementary knowledge in gardening with agricultural background. Must be conversant with gardening operations.

Chowkidar (Two Posts)
Pay Scale Rs 750-940

Qualification

Preferably Ex-army man or Gorkha

Sports Attendant (Two Posts)
Pay Scale Rs. 750-940

Qualification

8th pass. Should be able to handle the sports equipments & able to prepare play fields etc.

Groundsman (Two Posts)
Pay Scale Rs. 750-940

Qualification

Should be able to prepare and maintain the play fields.

Safai Karamchari (Two Posts, One reserved for a female) : Pay Scale Rs 750-940

Qualification

Should have experience and ability of doing cleaning work.

Farash (One Post) : Pay Scale Rs. 750-940

Qualification :

8th class pass.

Reservations : 50% of non-teaching posts are reserved for SC & ST etc.

Dr. D.K. Kansal
PRINCIPAL

ANNAMALAI UNIVERSITY

NOTIFICATION

M.B.A. PROGRAMME - 1992-93
(Full Time)

Applications are invited for admission to M.B.A. (Semester) Programme (Full-time) for the academic year 1992-93. The application forms and prospectus can be had from the REGISTRAR, ANNAMALAI UNIVERSITY, ANNAMALAINAGAR -- 608 002 on payment of Rs. 150/- in person or by post by sending a Demand Draft for Rs. 160/- which includes Rs. 10/- for postal charges in favour of the REGISTRAR, ANNAMALAI UNIVERSITY payable on Indian Bank or Bank of Madura Ltd., at ANNAMALAINAGAR or State Bank of India at CHIDAMBARAM. At the bottom of the back side of the Demand Draft name and address of the candidate and course asked for should be clearly indicated. The application form together with the prospectus will be issued from 06.05.1992.

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Last date for the receipt of filled in applications by the University is **16.06.1992.**

The University will not be responsible for any postal delay.

No. K2/6/92
Annamalainagar
Dated: 02.05.1992

Dr. PR. Karpagaganapathy
REGISTRAR

ANNAMALAI UNIVERSITY

NOTIFICATION

Applications are invited for admission to the following courses for the academic year 1992-93.

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4. Post B.Sc. Diploma in Computer Science and Applications	Rs. 50/-
5. B.Sc. (Ag.) Degree	Rs. 50/-
6. M.Sc. (Ag.) Degree **Branches :** 1. Agronomy, 2. Agricultural Entomology, 3. Microbiology, 4. Plant Pathology, 5. Soil Science and Agricultural Chemistry, 6. Agricultural Economics, 7. Genetics and Plant Breeding, 8. Agricultural Extension and 9. Horticulture.	Rs. 50/-
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1. B.E./B.E. (Chem.), B.Sc. (Ag.) B.Pharm. and D.Pharm.	**06.06.1992**
2. M.C.A. and Post B.Sc. Diploma in Computer Science and Applications	**16.06.1992**
3. M.E./M.E. (Chem.) (Regular & Part-time) and M.Sc. (Ag.)	**30.06.1992**

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Dr. PR. Karpagaganapathy
REGISTRAR

No. K2/8/92
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Dated: 02.05.1992

THAPAR INSTITUTE OF ENGINEERING AND TECHNOLOGY

(DEEMED UNIVERSITY)

PATIALA - 147 001

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Applications in prescribed forms are invited for admission to the following programmes for the session 1992-93 :

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Last date of receipt of completed application form is July 20, 1992 (upto 5 p.m.)

A Juneja
REGISTRAR

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University News

MONDAY, MAY 18, 1992 Rs. 5.00

Anna Varsity Convocation

XII ANNUAL
ANNA UNIVERSIT
17TH FEBRUARY 1992

Shri Bhishma Narain Singh, Governor of Tamil Nadu & Chancellor, speaking at the convocation of the Anna University. Others seen in the picture are (from L to R) : Dr. M. Anandakrishnan, Vice-Chancellor, Shri Rm. Veerappan, State Education Minister, Prof. G. Ram Reddy, Chairman, UGC, who delivered the convocation address, and Shri A.C. Muthiah, Vice-Chairman, SPIC.

RANBAXY RESEARCH FOUNDATION

NOTICE

SUB : RANBAXY RESEARCH AWARDS FOR EXCELLENCE IN RESEARCH WORK IN THE FIELDS OF MEDICAL AND PHARMACEUTICAL SCIENCES

RANBAXY RESEARCH FOUNDATION, established in 1985 by RANBAXY LABORATORIES LIMITED, a leading Pharmaceutical Company, instituted annual Awards of Rs.50,000/- (Rupees fifty thousand only) each for outstanding research work in the fields for Medical and Pharmaceutical Sciences. The 6th set of Awards (1990) has been announced.

The Foundation now invites nominations for the following three Awards (1991):

A. MEDICAL SCIENCES

- a) Basic Research
- b) Applied Research

B. PHARMACEUTICAL SCIENCES

Indian Nationals in India and abroad are eligible for the grant of these Awards.

Nominations for the Awards can be sponsored **only** by Heads of the Institutions and should reach the undersigned by **30th May, 1992.**

There is no special Nomination Form for the purpose. However, nomination papers should include the following details :

Ten copies each of Bio-data, List of Publications/Research Papers, Statement of Research Achievements already rewarded, Detail of Research Work for claiming Awards and ten sets of **Specific** Publications/Research Papers.

The detailed procedure has been intimated to all the Heads of the concerned Institutions and the same should be strictly adhered to in sending the nomination papers. Clarification, if any, in regard to the procedure etc. can be obtained from the undersigned.

DR O.P. SOOD

RANBAXY LABORATORIES LIMITED
19, Nehru Place
New Delhi - 110019

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Editor :
SUTINDER SINGH

Universities and their Autonomy in the Indian Context

R.N. Chaturvedi*

The pioneer universities of Calcutta, Bombay and Madras were established as autonomous institutions. Not only they have continued to be autonomous institutions of higher learning, their example has encouraged the government to persist in this policy of establishing more and more autonomous institutions in the country. Yet the concept of autonomy as applied in the case of institutions of higher learning, has been far from neat and Gajendragadkar Committee had to make certain observations about the use of the academic autonomy to clarify the situation.

The committee observed that no one is above law and that a university, when it is an autonomous body, is not 'a State within State'. This means that the term autonomy when applied in the case of institutions of higher learning does not connote what it implies in the phrase like 'Provincial Autonomy'. It is also observed that autonomy in the university is not something legal or of a statutory nature but an ethical necessity for the furtherance of academic matters. These observations indicate that autonomy (whatever it means) cannot be claimed as a matter of right. It is to be viewed as something falling in the category of non-physical infrastructure, necessary for furtherance of the cause of higher education. This point was emphasised by the Committee in the context of the recommendations for representation of the students in the academic bodies of the universities. The Committee further observed that it was not because it was claimed by the students, but because the participation of some serious students in the universities' bodies was expected to further the academic interests.

The universities in India did not have an organic growth like those of Oxford and Cambridge in the U.K. Initially only three universities were established at Calcutta, Bombay and Madras by the then Government by legislative enactments. There are at present about 200 universities and each one of them have been brought into being by a separate legal enactment. Interestingly enough all of them have been established as autonomous educational institutions of higher learning.

Universities in India were designed as autonomous when there was no provision for election and all the members of the Senate were nominated by the Government. The change in the procedure regarding composition of various university bodies like Senate, Syndicate or Executive Council, Academic Council and Board of Studies does not change the connotation of the term of university autonomy.

A university in a modern society is not meant to function in an isolated situation. Every university is an indivisible whole, but it is just one among numerous such institutions scattered not only within the bounds of a country but all over the world. For this reason, it has to maintain its standards if it is to justify its existence with any degree of academic excellence vis-a-vis other universities of the world. This requirement serves as an objective worth striving for and also as a limitation on way-ward exercise of its autonomy.

Assistant Registrar, University of Ajmer, Ajmer-305001.

Autonomy in higher education is often conceived to have two aspects viz. internal and external. In the modern world external autonomy in the sense in which it was enjoyed by the Universities of Oxford and Cambridge in the early days of their growth or something analogous to it, is unthinkable. The countries in which the universities exist and function have, their overall policies and the universities, too, have to adjust themselves with them. This implies that they and their affairs cannot be immune from discussion, comment and criticism in the national and state assemblies and in the press. As corporate bodies they can sue and be sued in the courts and are subject to the laws of the land. External autonomy can, therefore, never mean that universities are lords of all they survey, and their rights, there is none to dispute. 'External autonomy' can merely connote complete freedom from extra legal or extra-constitutional pressures in the working of the universities. It is this aspect of external autonomy which has to be safeguarded to make the internal autonomy function in a meaningful way.

There are numerous ways in which this external autonomy has been eroded by extra-legal and extra-constitutional pressures which are brought to bear in very subtle ways. If the Government (irrespective of its shade and colour) wishes, the erosion of external autonomy can be brought down to the minimum. Extra-legal and extra-constitutional pressures might continue but they would cease to be effective within the constitutional framework.

Internal autonomy implies that various academic bodies like Senate, Syndicate, Board of Studies, Faculties and Academic Council are free to work in their respective spheres without any intervention or interference by external forces. These bodies enjoy autonomy under the rules in all the universities of India. Since the implementation of the scheme of rotation of headship, with much greater participation of staff councils in the administration of teaching departments, the scope of internal autonomy has also become much wider than before. Bodies like Faculties, Boards of Studies, and Academic Council are composed purely of teachers, Senate and Syndicate have also very fair representation of teachers and some representation of students. The acid test of autonomy is the extent to which these bodies function without external intervention or interference. There is not much empirical evidence to show whether or not there is political interference in the working of these bodies. To the extent that these bodies function with an eye on academic standards with individual interests kept in check, the observation that autonomy in institutions of higher learning is an ethical necessity will stand vindicated.

There is one more aspect of university autonomy and it is financial. The govt., whether of the States or the Union, is answerable to the legislatures for all the money spent by it. When universities are fully financed by the Govt., the question of financial autonomy in their case, has little basis in reality.

Extra-legal and extra-constitutional pressures and counter pressures that erode the internal autonomy are generally most active at the time of admissions or during the days of elections of students unions or at the time of selection of teams for various games and sports. As things stand there is hardly any university affair on Indian campus in which they are not present. The cases in which these pressures succeed in pushing up the less deserving and pulling down the more desiring are too subtle to be investigated. But the atmosphere generated by these pressures renders it vicious. The under current of the feeling that outside support is weightier than merit , tends to depress those whose eyes are on merit in every department of activity. In such an atmosphere, merit, which is another name of high standards, loses charm of pursuit. Undue favours (possible to an extremely limited extent only) seem to have become a commodity so attractive as to allure a large section of ambitious teachers and over ambitious students. The academic bodies of the universities can hardly be expected to remain untouched by this sort of surrounding climate. Those teachers who have affiliation with outside political leaders develop the trait of purchasing and selling undue favours and consequently they can hardly be expected to work in the academic bodies of which they happen to be members with a mind concentrated on standards alone. Autonomy even if conceived as an ethical necessity, but if it gets planted in an unethical environment, it ceases to be functional as a force for a healthy growth of the universities.

All the universities in India suffer more or less from the evil effects of extra-legal and extra-constitutional pressures and counter-pressures in their working. The appointment of a high powered committee by the U.G.C. under its own chairman in the year 1982, is an evidence to indicate that the malady has acquired dangerous proportions. Pressures, counter pressures and undue favours appear (more often than not) in ideological garbs, resulting in unrests and disturbances of varying kinds, all making the climate quite uncongenial for healthy and academic pursuits on the Indian campuses.

2 SEP 1992
C. F. T. R. I., MYSORE

Imperatives of University-Industry – R & D Organisation Interaction for National Development

D. Swaminadhan*

Momentous changes are taking place on the international scene. The end of the cold war, the transformations in Eastern Europe, the disintegration of the Soviet Union and the imminent emergence of a common market in Western Europe are events of truly historic significance. These changes will have a profound impact on both the international relations and the world economy. Simultaneously, most developing countries have embarked on bold measures of reform in restructuring their economies and opening up to forces of competition, both domestic and foreign. All these changes will certainly have an impact on the Indian economy.

India is passing through a historic moment on the economic front. The Eighth Five Year Plan is being launched in the back-drop of certain strengths in the economy as well as certain concerns which have surfaced over the recent years. The Government have taken new initiatives and bold decisions to reorient and restructure the economy to meet the challenges of the present economic crisis in the country.

The above scenario necessitates bringing in certain imperatives in the approach to planning and these include – providing for more decentralisation; enlisting people's cooperation and participation in the national programmes and schemes; striving to achieve targets with less financial outlays through improved efficiency and productivity, optimising the utilisation of resource and encouraging greater involvement of private sector etc.

In the process of increasing efficiency and productivity in a situation of resources crunch, pooling, sharing and optimising the use of available resources assumes importance. It applies to all sectors and there should be greater cooperation and interaction. Interaction and interdependence are well recognised concepts in the present day world. Universities, Industries and R & D Organisations are no exception to this.

R & D Efforts in the Country

Research activity in science and technology in India are undertaken by universities and institutions/units/departments which can be classified under the various sectors as – Central Government, State Governments, Higher Education Sector, Public Sector Industry, Private Sector Industry, and Non-profit Institutions/Associations.

Major scientific departments with their research laboratories/institutions in the Central Government are the main vanguards of the research efforts being varied out in the country. Besides, there are other Central Government ministries/departments who have a number of research institutions under their administrative and financial control. In addition, there are inhouse R & D units of public sector industries which are mostly under the administrative control of the Central Government but a few public sector industries are either under State Governments or in the joint sector of Central and State Governments. Some private sector industries have established their own inhouse R & D units. The inhouse research and development units are responsible for undertaking R & D activities for the respective industrial organisations. The State Governments have their own research institutions which mainly comprise agricultural universities and their research stations besides having other research institutions directly under different departments of the State Governments.

In the Higher Education system there are 198 universities and university level institutions and over 7000 colleges. The higher education sector undertakes research activities mostly of basic (fundamental) and applied research through their own funds and funds from U.G.C. as well as through projects sponsored by the major scientific departments of the Central Government.

There are non-profit research associations/institutions which carry out R & D activities and these are supported by either industry or government or both.

With the advent of the new Industrial Policy and liberalisation, the Indian industry is exposed to more domestic and global competition. To meet the challenge it requires modernisation, upgradation of the competency of the personnel, utilisation of modern management techniques and increased efficiency and productivity while maintaining quality.

**Member, Planning Commission,*
Govt. of India.

Annexure-I gives an idea of the magnitude of national expenditure on R & D activities. For example, National expenditure on R & D during 1989-90 was about Rs. 4004 crores. Such a vast potential of R & D effort should be effectively utilised for the industrial growth of the country.

Technology Policy and the Role of Universities and R & D Organisations

In a country of India's size and endowments, self-reliance is inescapable and must be at the very heart of technological development. We should develop indigenous technology appropriate to national priorities and resources. Rightly, the basic objectives of the Technology Policy Statement of 1983 are: development of indigenous technology and efficient absorption and adaptation of imported technology appropriate to national priorities and resources. The universities and the R & D organisations (including national laboratories) have an important role to play in this regard.

The Prime Minister of India recently observed that "A poor country like India cannot go on changing technology every year. We must adopt a futuristic approach". This has a special relevance for maintaining excellence, modernisation and self-reliance in a sustained manner. In this context, technology forecast (TF) and technology assessment (TA) assume an important role. Since universities and IITs are familiar with frontiers of knowledge it is but natural that they should play an important role in technology forecast (TF) and technology assessment (TA) to help the country to select right areas of action.

For a situation where global competitiveness is being driven by technology as an important element, TF/TA studies and their continuing updates with special stress on the assessment of domestic and global markets are essential. Market driven technology development will now onwards be crucial for industry and government. Indicators available from TF/TA studies with assessment of markets, provide valuable clues for the universities, R & D laboratories and IITs to plan in advance their research orientation. Concerned universities and IITs should have a TF/TA group with the thrust areas they are specialising. These groups may also be encouraged to make specific TF/TA and techno-market surveys for the industry. In addition to TF/TA studies, universities and IITs could also conduct tailored courses under continuing education programmes for industry personnel regarding some new results of TF/TA studies and also enabling industry personnel to do some studies themselves.

Technology Information Forecasting and Assessment Council (TIFAC) has done some TF/TA studies and it is also building up an information base to continue the TF/TA studies in more quantitative manner with continual updates.

A common dialogue between universities/IITs, TIFAC and Indian trade & industry associations will bear fruit towards the development of right type of indigenous technologies.

Need for University-Industry-R & D Organisation Interaction

The new National Policy on Education points out the need for a networking system between technical education on the one hand and industry, R & D organisations and other related sectors on the other. This will become possible only if a process of polarisation and networking are initiated as suggested by the Working Group on Technical and Management Education set up by the Ministry of Human Resource Development.

The need of the hour is to forge strong linkages for interaction between universities, industries and R & D organisations, which will result in : (i) pooling, sharing and optimising the use of resources, (ii) development of indigenous technology appropriate to our national priorities and resources, (iii) adapting the imported technology wherever needed for preparing the industries to meet global competitiveness, (iv) enriching teaching and research in universities with practical and field experience, and (v) universities and R & D laboratories getting valuable clues for research orientation. The process of interaction will not only lead to mutual benefit of the partners but also contribute to national development.

University-Industry Interaction

Excellence, modernisation, interaction and self-reliance are the four crucial elements in the development of Higher Education in general and Technical Education in particular. These factors should not be viewed in isolation but in relation to each other with the ultimate objective of attaining excellence.

The universities and the professional institutions should come out of their ivory towers and interact with the outside world. Similarly, the industries should build up confidence in the capabilities of the universities and the institutions and interact with them for mutual benefit. It should be recognised that the academic world, industries and R & D organisations together hold the key to the technology development in many of the core sectors of our country's economy. Through interaction the university gains insight into the problems of industry and it provides a base for research and education. Survival of industry largely depends on the improved, innovative and new technologies and for this purpose it needs the support of the academic institutions. Unfortunately, in our country universities including technological institutions and the industry have been run on parallel lines without interaction.

The lack of strong linkage between universities and the industry has led to the present situation where:

- the faculty, in general, have no industrial experience or exposure;
- there is not much provision for continuing education in the universities and institutions for practising engineers to update their technology competence;
- state-of-art in the industry prevents flow between organised research in the universities and institutions and evolution of industrial R & D;
- there is no suitable mechanism available for interaction in most of the departments of the universities and institutions;
- some of the universities and institutions feel constrained to accept contracts with time bound results;
- there is chronic dependence of our industry on foreign collaboration.

The remedy to this situation lies in forging strong interaction between the academic world and the industries. In this connection, I may mention that a Symbiotic Model, which is known as **Swaminadhan Model for University-Industry Symbiosis** has been proposed by me in the recent past, as the Vice-Chancellor of the Jawaharlal Nehru Technological University, Hyderabad (and published in the *University News* 14 May 1990 issue).

The universities and the professional institutions must so develop their capabilities as to be looked upon by the industry and by entrepreneurs as their technology brain trust, reservoir of technology know-how and technological human resource, which they can tap with confidence. The academic institutions should be sources of information and advice on technology choice by keeping a constant tab on an updated data base with adequate knowledge of technology change, technology innovation, technology transfer, technology adaptation and model plans whose technologies have earned recognition and acclaim. They should become a clearing house for all informations on the technological developments taking place in the country.

Universities must enter to country's industrial life and become a part of it and thereby become a partner in progress and a frontline organisation in technology and technological human resource development for the industry, its promoters and the entrepreneurs as well as the technological trouble shooter for industry. It should also become a conduit between industry and technology experts in various fields in the country and abroad.

The universities should prepare a comprehensive Directory of Technology Experts (DITEX) in different fields of technological expertise and know-how and forge continuing links with them through various means of involvement like seminars, talks, lectures, research collaborations, research guidance, sharing consultancy work with them and offering awards, honours, recognitions, honorary degrees, Visiting Professorships, positions like adjunct Professorship, guest faculty positions, etc.

The universities should conduct industry survey to know :

(a) Processes technology and equipment being used in the industry.

(b) The areas in which the university could contribute to industry in matters of research and consultancy and human resource development.

(c) Technology choices : technology change, technology import, technology innovations, technology transfers etc.

The IITs have initiated several measures and programmes towards interactions with the industry like establishment of Industrial Foundations working on commercial lines. Establishment of such a professional unit may lead to ease the chronic dependence of industry on foreign collaboration.

The industry should involve the universities and academic institutions in project identification, formulation, appraisal, implementation, monitoring and evaluation.

University-R & D Organisations Interaction

Major scientific departments and defence R & D organisations, in their research laboratories/institutions, have costly equipment and expert resource personnel. The utilisation may not be optimal and they could be shared with the university system which is mostly under-financed and exposed to obsolescence. The interaction between the universities, including professional institutions of higher learning, and R & D laboratories will lead to mutual benefit.

The following interactions could be identified :

i) Sharing of Costly Equipment :

The costly equipment available in National research laboratories could be thrown open to the university system through a suitable Memorandum of Understanding. The UGC has been successful to some extent in this regard through signing Memoranda of Understanding with the Atomic Energy Commission and Council for Scientific and Industrial Research (CSIR) for making available their facilities to the university system. Efforts were made by the Jawaharlal Nehru Technological University, Hyderabad, to enter into a Memorandum of Understanding with some of the National laboratories situated at Hyderabad to use their facilities for teaching and research.

ii) Mobility and Exchange of Faculty :

It is desirable to provide for free exchange of faculty, experts and scientists among universities, industries and R & D laboratories. It will enrich teaching and research in universities with practical and field experience and enable the university faculty to get exposed to industrial and R & D environments.

As also recommended by the Working Group on Technical and Management Education set up by the Ministry of Human Resource Development, mobility and exchange of faculty between academic institutions, national laboratories and industry should be encouraged to prevent inbreeding. To facilitate such free mobility and exchange of personnel, the existing rules and regulations regarding inter-departmental deputations etc., should be modified and liberalised.

iii) R & D Collaboration :

The universities and the R & D laboratories can take up R & D collaboration activities combining their research potential and resources.

iv) Joint International Consultancy :

The universities/IITs and R & D laboratories may have their own strengths and deficiencies for consultancy. Coming together, they can cover up the deficiencies of each other with their mutual strengths and forge a cohesive and strong partnership for International Consultancy.

Joint educational international consultancy could be offered, which may include institution building, establishment of specialised laboratory facilities, development of curriculae, organising continuing education programmes like seminars and short courses, joint research projects, faculty development and technical staff training. Through industrial consultancy, we can help foster closer interaction between the educational institutions and industry in the recipient country by sending our experienced faculty and scientists and assisting them in taking up industrial consultancy assignments and extending the specialised analysis and testing facilities available at the universities, institutes and national laboratories in India. Consultancy services could also be extended directly to industries abroad.

International consultancy will result in better appreciation of the technology and industrial capabilities of India in the receiving country, finally leading to mutually beneficial commercial relations.

v) Joint Academic Programmes :

Joint academic programmes in emerging areas of technology could be offered using the combined potential of the teaching faculty and the scientific personnel and infrastructural facilities of the universities and the R & D laboratories.

The finest example of this approach is the MoU between the Jawaharlal Nehru Technological University and the Indian Institute of Chemical Technology at Hyderabad to offer a M.Tech. programme in Chemical Technology, mostly using the facilities of the Institute.

R & D Laboratories could also be recognised by the universities for Ph.D. programmes.

Industry-R & D Organisations/Laboratories Interaction

The government has taken several measures towards promoting industrial research in industry itself. By the end of 1988-89, there were nearly 1075 inhouse R & D units which are likely to grow around 1500 by the year 1995. The growth of R & D in industry, however, still remains to be unimpressive. The R & D expenditure by Industry, as a percentage of total R & D expenditure, is only 21% in India compared to 61% in U.K., 63% in Japan and 72% in U.S.A.

Indian industry is ushering in a new era of high technology covering micro electronics, space technology, special materials, bio-technology, fine chemicals, life saving drugs and so on. In this context, launching work for acquiring exclusive technologies assume special significance as in many of these areas technologies may be denied to us.

To meet the challenge of technology obsolescence and for the related technology development aspects, the industry needs the support of R & D laboratories as much as it does from the universities.

The specific areas of interaction between Industry and R & D organisations are: (1) Technology development and transfer, (2) Technology adaptation, (3) Productivity improvement, (4) R &D collaboration, (5) Consultancy, and (6) Sponsored research.

The Council of Scientific and Industrial Research (CSIR) is assigned the functions of promotion, guidance and coordination of scientific and industrial research in the country. CSIR laboratories hold the overall charge of fostering industrial development of the county. Its Technology Utilisation Division (TUD) is concerned with promoting the marketing and utilisation of CSIR's knowledgebase, expertise and facilities through enhanced linkages with industrial organisations, counselling and design organisations, financial institutions and other potential users. Polytechnology Transfer Centres are set up in some State capitals to assist the local industrial units in identification and solving of their scientific and technological problems.

Greater efforts with widened scope are needed by all the national laboratories and scientific institutions to help the Indian industry. The Indian industry should on its part build up more confidence in the national laboratories and institutions (and universities) and utilise their expertise and resources for technology innovation and development, technology transfer and adaptation, productivity improvement, consultancy etc. In turn, the requirements of industry will provide the base for R & D activities in the national laboratories. Thus there is greater need for symbiotic relationship between industry and R & D Organisations.

Model for University-Industry-R & D Organisation Interaction

For realising effective symbiotic relationship between universities, R & D organisations and industries, a model is formulated and presented here (Annexure-II). The word 'University System' in the Model may include professional institutions of higher learning in Engineering, Technology, Medicine, Pharmacy, Agriculture, Management etc., and similarly the word 'Industry' may include any other related sectors of economy.

To bring about effective interaction, there should be specific cells/units in the universities, R & D laboratories and industry to act as contact points and for coordination. For example, I have established a Bureau of Industrial Consultancy and R & D Activities (BICARD) in the Jawaharlal Nehru Technological University, Hyderabad, to interact with the industry and other sectors to acquaint with their problems, to boost their confidence in the university's capabilities, to receive consultancy assignments and to coordinate with the concerned schools and departments of the university in executing the work.

Finally, I feel that the financial and promotional agencies have their own role to play to get closer interaction between the academic institutions, R & D organisations and the industry which ultimately is going to benefit the funding agencies in tackling industrial sickness. In this context, there is a need for creation of a National Cell to promote and coordinate the linkages between the promotional agencies, university, industry and R & D organisations.

Conclusion :

It is believed that the Swaminadhan Model for University-Industry-R & D Organisation Symbiosis presented now, if implemented, will result in pooling, sharing and optimising the use of resources in terms of men, material and finance in these sectors and help towards national development through industrial growth. Teaching and research activities in universities gets enriched. There would be better and relevant industrial R & D output and the industries will thus be well prepared to face the global competition. For effective realisation of the desired results, implementation of the Model through the suggested National Cell for promotion and coordination, appears to be a logical course of action.

ANNEXURE – I

NATIONAL EXPENDITURE ON RESEARCH AND DEVELOPMENT

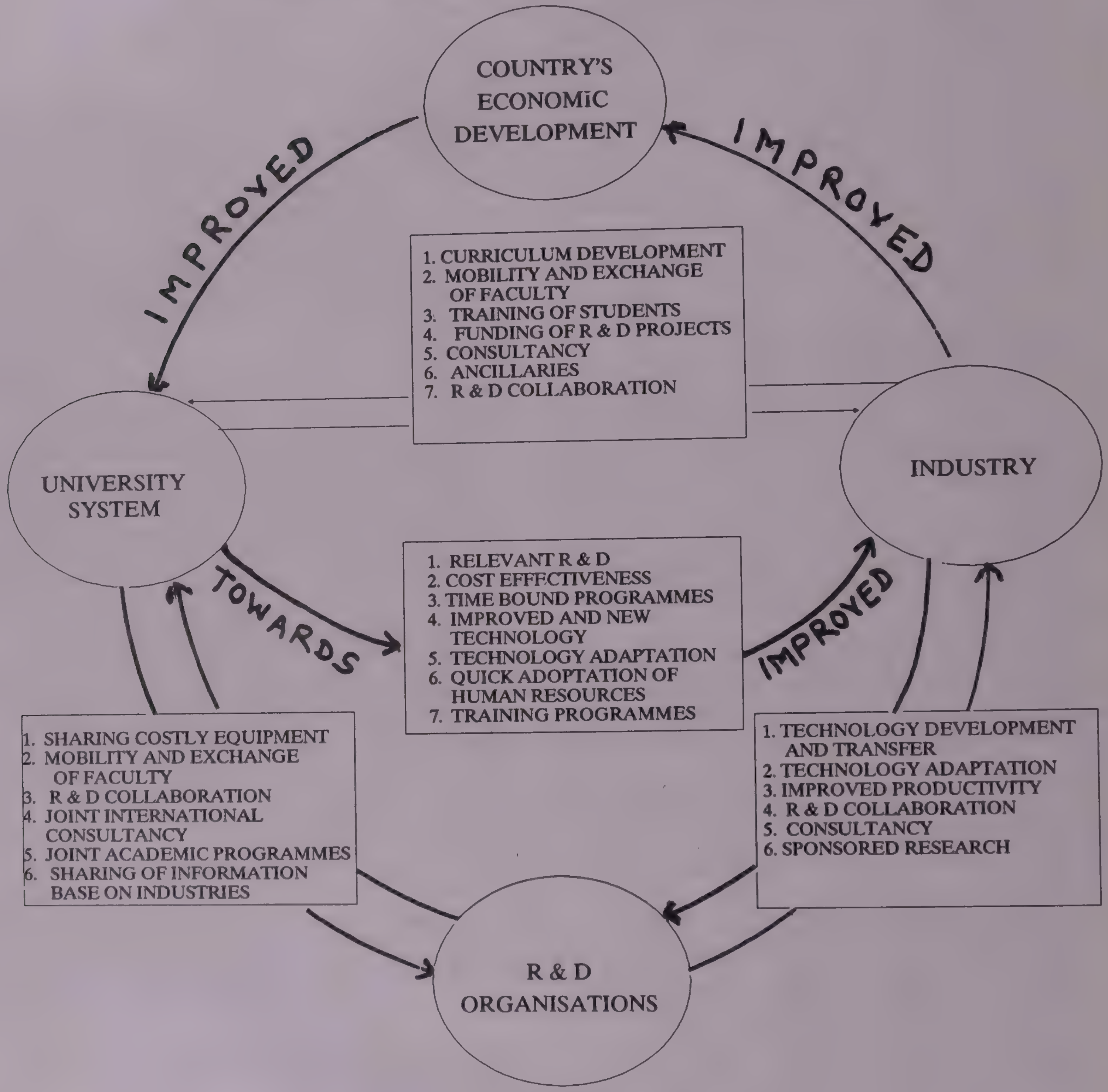
(Rs. Crores)

Sector	*Research and Development Expenditure*														
	1948-49	1950-51	1955-56	1958-59	1965-66	1970-71	1975-76	1980-81	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90
Central Sector	1.10	4.68	12.14	21.78	62.45	112.47	287.63	580.49	1053.37	1422.25	1654.06	2039.68	2442.75	2875.11	3306.38
State Sector	N.A.	N.A.	N.A.	1.00	3.51	12.58	26.73	59.34	119.90	126.11	162.78	164.56	183.92	232.91	260.86
Private Sector	N.A..	N.A.	N.A.	0.15	2.43	14.59	42.35	120.69	207.83	233.19	251.94	291.63	310.27	363.79	436.55
TOTAL	1.10	4.68	12.14	22.93	68.39	139.64	356.71	760.52	1381.10	1781.55	2068.78	2495.87	2936.94	3471.81	4003.79

Source :
1. Data collected and compiled by DST, Research and Development Statistics, 1988-89.
2. Data for 1948-49 and 1950-51 Science Policy and Organisation of Scientific Research in India page 99.
3. Data up to 1970-71 Report on Science and Technology. 1970-71 brought out by COST.

NOTE :
1. Data for 1948-49 represents only expenditure of CSIR, ICAR, ICMR and DAE.
2. A number of organisations are engaged in scientific and technological activities such as weather forecasting, geophysical surveys, teaching, consultancy etc. In addition they also undertake research for which in a number of cases no separate account is maintained. Wherever such details have not been provided, their expenditure on research has been estimated.
3. The number of units in the private sector varies from year to year.
4. Data for 1989-90 has been estimated by applying the following rates of growth : Central Sector 15%, State Sector 12%, Private Sector 20%.
5. Data refers to 895 Private Sector Industries which include projected data for 67.
6. N.A. = Not Available.

SWAMINADHAN MODEL FOR UNIVERSITY -INDUSTRY - R & D ORGANISATION SYMBIOSIS


COUNTRY'S ECONOMIC DEVELOPMENT
IMPROVED
IMPROVED
1. CURRICULUM DEVELOPMENT
2. MOBILITY AND EXCHANGE OF FACULTY
3. TRAINING OF STUDENTS
4. FUNDING OF R & D PROJECTS
5. CONSULTANCY
6. ANCILLARIES
7. R & D COLLABORATION
UNIVERSITY SYSTEM
INDUSTRY
TOWARDS
1. RELEVANT R & D
2. COST EFFECTIVENESS
3. TIME BOUND PROGRAMMES
4. IMPROVED AND NEW TECHNOLOGY
5. TECHNOLOGY ADAPTATION
6. QUICK ADOPTATION OF HUMAN RESOURCES
7. TRAINING PROGRAMMES
IMPROVED
1. SHARING COSTLY EQUIPMENT
2. MOBILITY AND EXCHANGE OF FACULTY
3. R & D COLLABORATION
4. JOINT INTERNATIONAL CONSULTANCY
5. JOINT ACADEMIC PROGRAMMES
6. SHARING OF INFORMATION BASE ON INDUSTRIES
1. TECHNOLOGY DEVELOPMENT AND TRANSFER
2. TECHNOLOGY ADAPTATION
3. IMPROVED PRODUCTIVITY
4. R & D COLLABORATION
5. CONSULTANCY
6. SPONSORED RESEARCH
R & D ORGANISATIONS

NOTE :- 1. 'University System' includes professional institutes of higher learning in Engineering, Technology, Medicine, Pharmacy, Agriculture, Management etc.

2. 'Industry' may also include other sectors of the economy.

Relevance of Higher Education
The Missing Factor

K.G. Meenakshi*

What ails our Education — higher education in particular — is the most enigmatic question that has been eluding an answer. Educational technologists and experts may offer explanations and suggest possible remedies. Suggestions worded in highly technical jargon are added to the already accumulated expert committees' reports and recommendations. However, if there is one point on which all of us would agree, it is the failure of our higher education system to cater to the needs of the society. This has resulted in the products of the system merely adding to the already inflated segment of unemployed.

With all the changes that have been brought about in the field of higher education, it still remains as ossified as anything could be. The general attitude of the students who go through the process of education is one of indifference. Lack of interest is characteristic of the general attitude, prevailing among the students. They feel, with justification, that there is not much in the system that would be of use to them in their search for a gainful career. The products coming out of the pipleline of higher education find themselves ill-fitted to get into the scene of national life in some useful capacity or the other. An education system that is useful neither to the individual nor to the society could very well be termed a national waste.

The most glaring missing factor in our educational system in general is the element of social relevance. All those who are involved in educational planning and those who are interested in evolving a purposeful education system have to take up this problem with all the seriousness it warrants.

Higher Education that is available in our colleges, especially at the undergraduate level, is tradition bound. Though some structural changes might have been made in the post-independence era, the spirit of the system remains the same. The waves of new ideas, concepts, theories etc., have left the education system untouched. Even the autonomous colleges are going in for mere syllabi changes keeping the four corners of the traditional courses intact.

However, we are witnessing sea changes taking place in the area of social and economic activities, opening out many areas, calling for participation by people who are properly equipped. The frontiers of knowledge have exploded with a big bang and the process is going on and on, throwing up many, many new areas of micro units of knowledge. A layman is literally baffled by the volcanic eruption taking place in the sphere of knowledge. Knowledge also is becoming demassified giving way to many areas of specialised knowledge and skill.

Viewed in this background, our higher education system stands discredited. The so-called beneficiaries of higher education acquire neither knowledge and professional skill to get into any one of the career slots available nor the mental make up to face the challenges of life. They lack confidence in their capability to achieve. They lack the mental maturity to take decision that situation warrants. In short, they come out with a personality that has not been properly shaped during those years of stay in an institution of higher learning.

What our students go through is a placid process of collecting bits and pieces of knowledge ill-defined and disjointed. Hence the need of the hour is to take a fresh look at the entire gamut of higher education to make it relevant and meaningful.

As it stands now, the arts and sciences courses available in our universities do not fall into any special category. They seem to be neither general nor specialised education programme. The only consoling factor is that successful completion of these traditional arts and science courses is a passport for entering P.G. courses in their respective disciplines. However, those who do not opt for the postgraduate courses find them-

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**Executive Trustee, Padmabhushan Sri N. Ramaswami Ayyar Educational Complex, Tiruchiraplli-2.*

selves in the most unenviable position of having to compete for jobs for which a mere higher secondary certificate would be sufficient. With a bachelor's degree in History or Economics or Botany or Zoology, they cannot compete for careers which need some special skill and technical capability.

No one would question the responsibility of the society to give its people general education of a fairly high standard. But the point at issue is whether one should tag collegiate education to the category of general education, when there is a higher secondary examination coming at the end of 12 years schooling, with its heavily loaded curriculum. The present curriculum prescribed for the higher secondary courses — content wise — is a substantial programme. This could be made a finishing school programme by the addition of one more year if need be with some inputs of general academic equipment. Once this is made a stage complete in itself, the mad flow into the colleges for university education could be checked to a great extent. Once the 'Great Trek' to colleges is checked and the crowd is diverted to other pockets of social and economic activities, universities could try to restructure their present traditional courses into more meaningful academic programmes relevant to social needs and purposeful in terms of national development. University education right from the undergraduate level should be so structured as to meet the country's academic, scientific, economic and technological requirements of its growth and development.

In short, a concerted effort is to be made to stop the mass flow into the colleges for want of a better option. Otherwise, even the concept of autonomous institutions will remain a paper concept since no meaningful academic programme could be carried out in an institution with not only an inflated student strength but also with students who are not academically motivated.

Then the courses offered in colleges; these need to be reframed. Most of them, as mentioned earlier, are traditional courses. How relevant such block disciplines like History, Economics or even science courses are is a matter for discussion at a time when the world is strewn with bits and chips of knowledge resulting from the explosion taking place in the world of knowledge — each bit developing into a distinct area of study and research. Who would have ever thought of so many fascinating areas in the field of biological sciences!

Furthermore, most of the courses offered are theory-oriented with their relevance to the world of 'live' situation not brought out in a meaningful manner.

Their application value is the missing link. This explains the attitude of indifference on the part of the students to curriculum that is available in our colleges. The students, rightly though, look forward to courses that are pragmatic. Science programmes in particular have to be rewritten keeping in view the application component. This will also help to establish close linkage between educational institutions and the industries or other relevant organisations. To the present day youth, education is a programme that should be beyond classroom work. Practical applications of concepts have to be demonstrated and related problems solved in the 'live laboratories'.

It is interesting to observe the reaction of the students to such pragmatic courses. One could see the radical change in the attitude of the students (taking such courses) — a sense of frustration, and an attitude of indifference giving place to a sense of optimism and interest in the programmes.

It may not be out of place to refer to such courses offered in Seethalakshmi Ramaswami College — an autonomous institution affiliated to Bharathidasan University. The degree programme and master's programme in Industrial Electronics, the degree programmes in Health Care and Hospital Management. Applied Commerce and Sericulture (which is one of the papers prescribed for the students majoring in Zoology) are programmes with a difference. Even as the students go through a programme of classroom teaching, they are given an opportunity to have experience to real life situations and problems. They are given training in organisations related to their areas of study.

This aspect of these courses has a tremendous impact on the students. The feeling that they are better equipped to get into career of their choice gives them a sense of satisfaction. It is not only the skill they acquire during the training period that matters. It is much more than that. The exposure they get to the world of reality, the world of work, with all those challenges helps to widen their understanding of theoretical knowledge they acquire through classroom teaching. They also get a proper sense of the value of the course which in turn gives them a sense of purpose of their academic work.

Is it possible to give this twist to all the traditional courses? Of course, it is possible to make the existing traditional programmes modernised so that the students are made to realise the value of these courses and their application possibilities.

Current problems, political, economic and social could be made the background for teaching social sciences. Wherever possible the students could be made to come in contact with the current problems which they could analyse to draw inferences.

History could be made greatly relevant and meaningful if the debates going on now on NPT or nuclear-free zone, the dismemberment of the great communist monolith and many other similar current issues are brought into curriculum and the students encouraged to participate in lively discussions. This will give them a sense of participation in the momentous events taking place in and around the country. Thus restructured, History to the students, is no longer a thing of the dead past but it is the most exciting thing of the ever changing present. Economic problems have a direct impact on the life of every member of the society. Economics has developed and progressed a long way from the days of Marshal. It has become an interdisciplinary area of study. Students of Economics have to be brought into direct contact with the problems of the day and the new ideas and concepts that are springing up in the area of economic life of the society. This would help to bring in the element of relevance to the study of economics. The line of demarcation between humanities and science has disappeared. Scientific and systematic study has become the characteristic feature of every branch of knowledge. With Mathematics becoming the foundation course for study of almost every branch of knowledge be it the study of languages or social sciences, almost all areas of knowledge now lend themselves to being analysed in a scientific and systematic manner. Experimentation is possible in social sciences also — the entire society being the laboratory where activities going on day in and day out either prove or disprove the theoretical concepts learnt in the classroom.

While framing the academic programmes, the institutions should also take into consideration, the local needs. The American system of rural colleges may seem to be a distant ideal for us but it is the ideal worth aspiring for. One has to remember that education divested of social linkage can never be a tool of national development.

Lack of flexibility in the system has led to the continuance of certain courses which have outlived their utility. The rate of out flow from the institutions of higher learning has to be related to the rate of absorption by various sectors of the society. Looking at the number of engineering graduates in Electronics and Communication passing out every year, one wonders whether the production rate has not exceeded the requirements resulting in many of them remaining unemployed. The system should be such that the courses are suspended for a short spell allowing the output and the requirements to strike a balance. If necessary, they should be revamped every now and then to suit the needs at a particular time. Human resources should not only be trained but trained properly to fulfil the social and political requirements of the nation. Institutions of higher learning would have failed in their duty if they do not tune their system to fulfil national objectives.

Analysis of the weak spots in our system of higher education would be incomplete, if a reference is not made to yet another aspect. The shift in higher education suggested above could make it relevant to the economic and technological needs of the society. These are time bound and will have to be constantly reviewed so that education goes parallel to the changing demands of the society. But this is not enough to facilitate a country's development and growth.

Education has got to give its people certain basic values which will constitute the cornerstone of all the skills and knowledge one may acquire. It is in this area that our system has failed miserably. What our society needs today is a 'good worker' — one who has inculcated the spirit of honest and sincere work. With all the rich natural resources and well trained human resources, no nation can hope to move unless its people are motivated to consider honest work as their primary responsibility to the society. If Japan has overtaken United States and other Western countries in the race towards economic prosperity and industrial growth it is not due to its technology based education but due to the work culture that has become the Japanese way of life.

The concept of work culture has not been integrated into our higher education system. Its conspicuous absence is the root cause of all our ills.

Time is running out and if steps are not taken to restructure the entire system of higher learning, our younger generation may lose faith in the system.

WOMEN & SPORTS

Towards an Effective Policy

Kiran Sandhu*

In an earlier article published in the University News of 11 May 1992, Dr. Sandhu stressed the "need to create a sports subculture for women". In furtherance of that aim, she now examines the present policies of the Govt. in the area of women and sports and proposes some effective measures.

Women today are different from women of yesteryears in all spheres of life. Their advance is in response to changing realities of time. Now that they are coming out of their seclusion and are sharing greater responsibilities in national reconstruction, it is time to explore various dimensions of women's development. Looking at women in sports, it is obvious that sportswomen are indeed 'moving forward' with the passage of time breaking barriers, low and high at different pace in various sections. Whereas it is a welcome feature to note that women's development is being given increasing importance in policy deliberations in general, it is also essential to revist the existing policy and plans for 'women and sports' to have a uniform approach to women's development through more meaningful participation programme as well as performance-oriented results in sports.

In spite of the nation's commitment to sports, a well formulated National Sports Policy and its special schemes, things have not, unfortunately taken shape to the desired extent. Despite the hectic development efforts in the field of 'Women and Sports' it has not been possible to establish its own status, reputation and professionals. It is perhaps due to the transitional problems particularly related to the attitude and approach towards 'women and sports'. This may also be largely due to the failure to implement properly, and to the fullest measure, many admirable schemes. Perhaps, this drawback is inherent in us, since there is not a shadow of doubt that it is the lack of a kind of culture that is most needed to preserve and maintain certain values, that has impeded progress. It becomes necessary therefore, to look back time and again and urge ourselves to the primary need to give effect to existing plans and schemes; also to rethink and formulate new plans to overcome the hurdles. After a little closer look at the environment, efforts and facilities, one feels convinced that 'Women and Sports' indeed need an integrated approach potential enough to bring about an overall development.

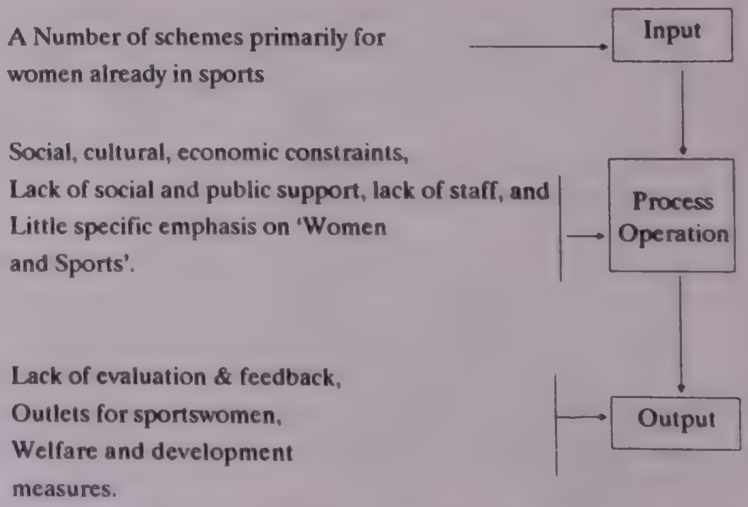
Existing Efforts : An Overview

In view of the importance of sports and physical education for good health and physical fitness, as well as to raise the national standard of games and sports for Indian sportspersons to perform well, a number of important schemes have been floated through central financial assistance and Sports Authority of India. A graphic representation of the Indian Sports as in existence now is presented here (on next page).

It will thus be seen of that all the gamut of schemes aimed at promotion of sports in the country, only the following three, namely, Sports Hostels Scheme, National Sports Festival for Women and Promotion of Sports and Physical Education among women are geared to encourage sports among women.

Observations :

An indepth analysis of development programmes with the input, the process and the output, throws enough light on the existing system. Whereas a number of very attractive schemes for sports promotion in general are in operation, there is very little being done with specific reference to women in sports. The following could be observed from the records and literature available, to identify the need to develop a system approach :


A Number of schemes primarily for women already in sports
Input
Social, cultural, economic constraints, Lack of social and public support, lack of staff, and Little specific emphasis on 'Women and Sports'.
Process Operation
Lack of evaluation & feedback, Outlets for sportswomen, Welfare and development measures.
Output

To get the best results, it is essential that there should be more awareness and the programmes are made more broadbased.

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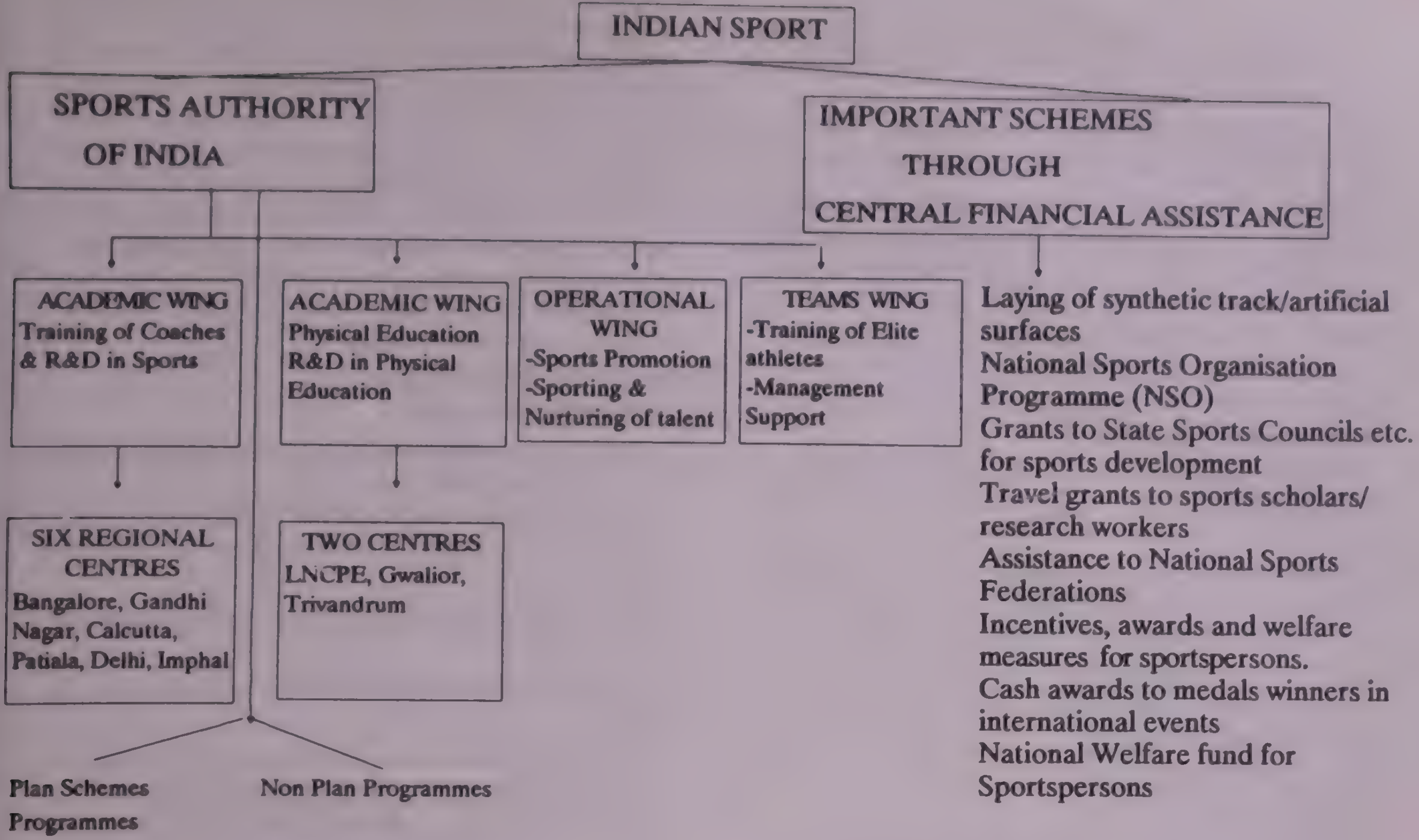

INDIAN SPORT
SPORTS AUTHORITY OF INDIA
IMPORTANT SCHEMES THROUGH CENTRAL FINANCIAL ASSISTANCE
ACADEMIC WING Training of Coaches & R&D in Sports
ACADEMIC WING Physical Education R&D in Physical Education
OPERATIONAL WING -Sports Promotion -Sporting & Nurturing of talent
TEAMS WING -Training of Elite athletes -Management Support
SIX REGIONAL CENTRES Bangalore, Gandhi Nagar, Calcutta, Patiala, Delhi, Imphal
TWO CENTRES LNCPE, Gwalior, Trivandrum
Plan Schemes Programmes
Non Plan Programmes

Laying of synthetic track/artificial surfaces
National Sports Organisation Programme (NSO)
Grants to State Sports Councils etc. for sports development
Travel grants to sports scholars/ research workers
Assistance to National Sports Federations
Incentives, awards and welfare measures for sportspersons.
Cash awards to medals winners in international events
National Welfare fund for Sportspersons

S A I Programmes

Plan Schemes Programmes

- National Sports Talent Contest Scheme
- Special Area Games Scheme
- *Sports Hostels Scheme
- National Coaching Scheme
- National Physical Fitness Scheme
- Central Pool of Technical Sports Equipment
- All India Rural Sports Tournament
- *National Sports Festival for Women
- North-East Sports Festival
- Scholarship Games
- N S N I S Patiala
- LNCPE Gwalior and Trivandrum

Non Plan Programmes

- Utilisation of stadia
- Preparation of national teams
- *Promotion of sports & P.E. among women
- General programmes, conferences, meetings etc.
- Photo Gallery of Arjuna Awardees

* Schemes which lay special emphasis on Women & Sports

- There is a need for the involvement of the department of Women Welfare and Child Development in addition to the Deptt. of sports to get more commitment to the cause of sports.
- There is greater emphasis on excellence but the attitude of expecting quick results is a big hurdle.
- Whereas, there is too much dependence on support and resources of the Govt., there are no props and incentives for public and private sectors to encourage sports.
- Imperatives and concerns of our society with regard to social, cultural, political and economic set up need to be taken more into account for policy planning for women sports.
- Sports as such do not have any outlet attached in terms of professional value and career programmes.
- Lack of involvement and commitment by women in sports for the purpose of policy planning and organisation and welfare of 'Women and Sports'
- Scholarships, incentives and welfare measures represent an end product than a means to betterment of life and performance.
- Sports does not get projection of being good as a career.
- Lack of evaluation and feedback process is too obvious.

A System Approach

In the background of existing circumstances and situation an alternative appropriate approach is required. To accelerate the development of Women and Sports, new and effective out-reach system needs to be developed. Primarily, due to the existing ineffective delivery system of sports to reach the masses, women are victims of gaps between policy-making and implementation. The seeds for initiation/emancipation of women to take to sports has to be equally planted in rural and urban areas. This can be realised by planning a total system approach making sports to reach the grassroot level to cater to top level women sports.

- Sports should be supported by adequate infrastructure and facilities provided at all levels to grow laterally and horizontally.
- Efforts be made to counter shortage of sports staff/trainers. Moderatley well read women (local talent) can be trained to deliver sports to pre-school, nursery, elementary and primary school female children. Such an effort may not deliver outstanding sportswomen in the first run, but would certainly help young girls to understand potential of body, discoveries of correct walking, running, jumping, and may lead them to aspire for higher attainments.
- Efforts be also made to reduce physical constraints of women in sports. Provision of mobility and neighbourhood sports services is another necessity of the system approach to sport. A minimum level of sports facilities and services be provided at local points, besides specialisation sports centres at nodal points with sufficient facilities. Non-urban areas would obviously have a much greater challenge in such a policy on provisions. It is in these areas that lack of local services acts as a potential constraint on sports pattern for women. Thus, public transport facilities need to be significantly improved; if possible, 'sports special' services may be introduced for women users to specific games centres from various areas.

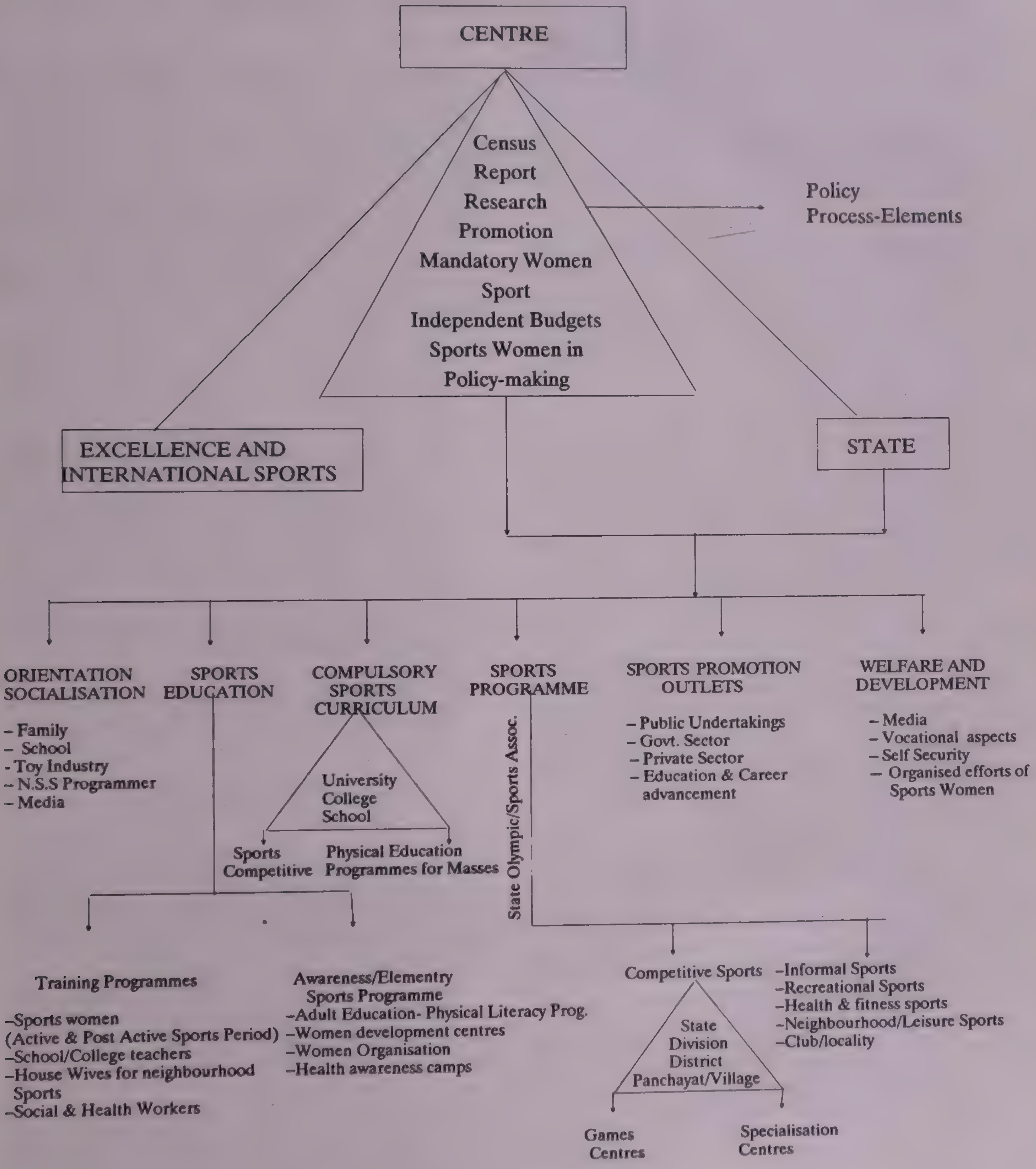
Need to Review Legislative and Administrative Provisions

- It should be mandatory for all educational institutions enjoying State patronage to provide equal opportunities and participation of men and women in sports and punitive action taken against the defaulters.
- Separate budgetary allocations should be made for women sports.
- Census should ascertain women's aptitude towards sports.
- Data banks should be created about the response and level of women sports region-wise as well as State-wise for more effective utilisation of resources.
- Treatment to sports for all at par with the NSS and NCC in terms of incentives.
- Promotion of informal sports among women as a form of recreation and health fitness should be encouraged.
- Sports education should be incorporated in the adult education curriculum to eradicate "physical illiteracy" existing among women.
- Women should be encouraged to play a greater role in the management of women sports not only on the field but at the level of policy formulation as well.
- Special incentives be provided for sportswomen, like job reservations, admission to educational institutions etc.
- Various government agencies should pool efforts to launch special campaigns to inculcate sports consciousness among women.

Orientation and Socialisation

No girl child takes birth with inborn complexes of gender role, which are otherwise imposed by parents and the society. To worsen the scene, such orientation has been carried on from generation to generation instead of making an attempt at change or modification. Besides other myths, parents also feel that if the girls are exposed to sports and masculine activities, they come of age soon. For whatever strong reasons, parents also lack sensitivity towards females in childhood, e.g., form of toys given to girls have entirely feminine and household approach. They are only exposed to the

SYSTEM APPROACH


CENTRE
Census
Report
Research
Promotion
Mandatory Women
Sport
Independent Budgets
Sports Women in
Policy-making
Policy
Process-Elements
EXCELLENCE AND INTERNATIONAL SPORTS
STATE
ORIENTATION SOCIALISATION
– Family
– School
- Toy Industry
– N.S.S Programmer
– Media
SPORTS EDUCATION
COMPULSORY SPORTS CURRICULUM
University
College
School
Sports Competitive
Physical Education Programmes for Masses
SPORTS PROGRAMME
State Olympic/Sports Assoc.
SPORTS PROMOTION OUTLETS
– Public Undertakings
– Govt. Sector
– Private Sector
– Education & Career advancement
WELFARE AND DEVELOPMENT
– Media
– Vocational aspects
– Self Security
– Organised efforts of Sports Women
Training Programmes
–Sports women
(Active & Post Active Sports Period)
–School/College teachers
–House Wives for neighbourhood Sports
–Social & Health Workers
Awareness/Elementry Sports Programme
–Adult Education- Physical Literacy Prog.
–Women development centres
–Women Organisation
–Health awareness camps
Competitive Sports
State
Division
District
Panchayat/Village
Games Centres
Specialisation Centres
–Informal Sports
–Recreational Sports
–Health & fitness sports
–Neighbourhood/Leisure Sports
–Club/locality

limited role models of mothers and mothers-in-law. Expenditure on girls training is usually considered like giving dowry. Such thinking needs to be changed.

- The girls should be made aware of the range of benefits of sports available and encouraged to take to sports in a natural way.
- The toy industry and commercial advertisers should eliminate gender discrimination in the production of toys and their advertisements to help the girls aspire for sports, since models of childhood are recreated in youth and adulthood.
- Sports for women should be presented as an important basic need similar to education, food, clothing and work etc.

Performance and Competitive Excellence

Women have shown that they can run, swim and cycle as good as men. They have sailed singlehanded around the world and climbed the highest mountains. The best women in some disciplines can now beat men good in those sports. If women are given the same sports advantages as men, their performance is bound to improve considerably.

(a) Policy plans and implementation:

- The need for more funds, strengthening the rural and tribal base to draw the potential talent, besides general sports orientation among masses. States should design and fund programmes on the basis of existing infrastructure and concentrate on women sports accordingly.
- Adoption of various women sports by Public Undertakings should be encouraged.

(b) Training programmes:

If we look at the excellence and performance of training programmes, there is very minimal difference in the structure and loading of training. Each woman athlete has to undergo extensive and intensive training. But, much greater difference exists in the behaviour structure of male and female athletes, which influences crucially the top level performance. Therefore,

- Each woman athlete at the competitive level needs to be considered individually. Intended success can be achieved through transforming motivation for training, enthusiasm for competition, guidance and welfare to top level of sports.
- Training programmes for performance and excellence should also keep in view that women are no less achievement-oriented than men; they too strive hard to live upto a standard of quality. They intend to combine both masculine and feminine traits, they experience stronger emotional stress and greater tension before competitions. More often, they express concern about their appearance as women than men about theirs as men. Elite sportswomen also are more dependent on coach and environment.
- A special care needs to be taken in planning training programmes for women, since excellence in sportswomen is also dependent upon 'element of change' as well as 'systematically worked out plan' during the calendar or training age of sportswomen.

Welfare and Development of Women in Sports : Sports as a Medium

(a) Media :

Media can play a great role in giving direction to women and sports. At present, a majority of programmes in radio and television are either covering cricket or presenting a brief of semi-final or final of few other games. Programmes about women sports get negligible time and space. Sometimes programmes appear to be made for, by and about men only. Women interested in sports do not even feel addressed to listen and watch the same. To add insult to the injury, every now and then, programmes deal with women as only domesticated beings (nutrition, home management), etc.

- An attempt should be made to present sportswomen as symbol of better fitness, strong mind, strong body and a complete personality in its own right.
- Sportswomen should also be seriously written about as major concern in sports literature to help better and faster transformation of women's role in sports and its relation to women's position in society and culture. It must specially deal with 'issues of women and sports' rather than distinctions between 'women and sports' and 'men and sports'.
- Films, documentaries, videos, photos, biographies, sports festivals of women should strengthen media as support communication.
- In commercial sector of advertisement etc., though as sportswomen's pace cannot be forced, yet possibilities should be explored to encourage a movement in sports related goods.

(b) Vocational aspects of women and sports:

In general, sports do not offer an encouraging picture of 'perfect future' for women primarily because academic qualifications are taken as a little surer qualification than sports. Secondly, sports has a limited life span due to its being directly related to one's health status. Sportswomen have to lay off sports at a specific age and cannot carry on till later age.

Thus, a tendency exists in the society either of an early migration or to give secondary preference to sports for women. Sports, so far in our country, also provide a very limited outlet for women, and so a greater range of risk cannot be taken in it.

- Sports for women should offer a wide range of careers for women to have better choices out of it.
- Sports industry should use sportswomen as consultants.
- During the period of active sports, women should

be given orientation and training programmes towards sports as a profession.

Priority by government and non-government agencies in job reservations, loan facilities, concessions etc., be given to sportswomen who perform reasonably well at various levels of competitive sports.

(c) Training for self security:

The word 'modernism' floats in society with a broad outlook but, even today, people still cling to the age old image of an ideal woman to confine herself to house, not to go out unescorted. Even if something unpleasant happens like eve-teasing or molestation, women are held guilty and feel ashamed for no fault of theirs. The first and foremost requirement is to shake off the false image, break the sense of insecurity and find courage – moral, psychological and physical – to deal with growing pressures and challenges.

Sports and physical training are best modes to provide a sense of self security by developing a strong body and a strong mind in women.

(d) Education of men towards women and sports:

Sportswomen, in general, are considered smarter and more outgoing, but majority of them have to submissively handover their talent and attitude towards sports to the so-called male dominated society.

I am convinced that if sportswomen are ever to eliminate sex role stereotypes, men must be educated in the area of sports for women. While planning and assigning the course of action, sportswomen shall not mistake sensitivity in a man for weakness and misuse of power as strength in favour of sensitive men. It is not to change roles of men, neither to substitute male in women's roles, but it is a precondition of sportswomen's class struggle for progress and development.

On the other hand, awareness among elderly women in families also need to be awakened regarding needs, status and importance of sports to encourage their sisters, daughters and grand-daughters.

(e) Access to Resources:

Major inequalities between men and women exist within our society in terms of access to resources. It is at this point, I wish to emphasise, that women will only participate in sports, when resources for participation are available to them.

Organizational Efforts of Sportswomen

Women in sports are seen as a force, but they are not yet organized. They have started realizing their potential but have not chalked out options and actions. Education, sports, work and social facilities for sportswomen shall be the means for development and freedom of choice for activities rather than ends in themselves. The critical importance of space and arrangement for sportswomen to be organised cannot be undermined and has to be recognised.

Organised efforts of sportswomen of past and present must not aim only for equal active participation in terms of plans, honours, positions and so on. In fact, they must work consciously to chalk out alternative survival path intending for a real change in terms of mass participation,excellence and better performance, economic gains and social acceptance of women and sports.

Its programme need not have any inherited paradigms as referral points but a theory with an operational strategy evolved by sportswomen out of their own experiences can provide a gate view. The sportswomen should be listened to, observed and understood for identifying root causes and its effects in sports to build a new framework out of this knowledge. Such organised effort of sportswomen must have a sense of consciousness for sports and women both, since sports consciousness can only raise awareness of women about sports and propel them towards being a powerful force in the society.

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Indian Higher Education

Prof G. Ram Reddy, Chairman, University Grants Commission, delivered the Convocation Address at the twelfth convocation of the Anna University, Madras. Prof. Ram Reddy said, "One crucial role Indian higher education can play is to bridge the existing gap between the traditional repository of skills in the Indian society and the needs of a vibrant and growing modern economy, thereby integrating the core and the peripheral sectors of the economy, as well as the rural agro-based and the urban-industrial sectors. This has to be attempted through an overhauling of the existing curricula. The overemphasis on liberal arts and the rigid examination system, the two major tenets of the colonial legacy inherited by Indian higher education, will have to be revamped; lateral and vertical linkages among curricular programmes also need to be established". Excerpts

The roads ahead of you are divergent. The one straight road ahead holds out the possibility of a long and fruitful adventure of exploring new frontiers of knowledge and seeking appropriate answers in your own fields of specialisation to questions reflecting the concerns of social justice and development, questions of great significance to a developing society like India's, questions which were so important to Anna.

It is for you to choose your road. But, while you choose it, it will be good to remember the legacy of this great institution, and also remember that among every hundred of your age-group in our country, only five get an opportunity to pursue post-secondary education, and only one in every four hundred of your age-group gets to enrol in an engineering college. It is also worth remembering that a country like ours, which has not been able to ensure even the minimum calorie intake for a healthy human subsistence for as many as forty per cent of the population, has in its wisdom provided you, the selected few, with a highly subsidised higher education. Why? Because India considers this as an investsment towards a just and prosperous tomorrow.

What stand out as the three most disturbing aspects of Indian higher education today are that (a) in spite of its commendable expansion in volume, the higher education system has not been able to cope with the pressures of population and the increasing aspirations of the citizens of a democratic nation; (b) the distribution of higher education and opportunities is highly skewed and inequitous; and c) there seems to be a glaring dysfunctionality in the relation between higher education and the economy. Indian higher education is just managing to cope with the pressures of numbers coming up the pipeline. Inadequate diversification into vocational streams at the higher secondary stage, in a way, forces the university system to dish out amorphous liberal arts programmes to the large numbers who seek higher education, and thus performs what may be called a baby-sitting role, till these young people eventually graduate into the world of unemployment. It is on this area of glaring mismatch between what the economy needs and what the university gives that I shall focus now. I am quite aware of the imperfection of the system and therefore I must "situate" my task today in a context that objectively describes some of those imperfections. My endeavour this afternoon is to paint, perhaps in bold strokes, a rough picture of this context.

As I said earlier, in our country there has been a consistent dysfunctionality between the output of higher education and the needs of a vibrant and forward-looking economy. The Indian university has retained a lot of its original character as a colonial institution. Its brief then, was to produce clerks to man the colonial administrative and revenue apparatus. In spite of all the reforms suggested during the past four decades, the basic character of the Indian university has not changed much.

One indicator of this dysfunctionality is the low proportion of students enrolling in science-related courses, engineering courses, agriculture courses and polytechnics. Enrolment in engineering and technology courses, for instance, constituted 6.5 per cent of the total enrolment in higher education in the early fifties; it increased to 8 per cent in 1963-64, but dropped to 3.8 per cent in 1974-75. In 1988-89, it was 4.98 per cent. It is nothing but a paradox that although the bulk of the Indian workforce is engaged in agriculture, the share of enrolment in the agriculture courses amounted to only 1.8 per cent in 1950-51, which further dropped to 1.3 per cent in 1981-83. And remember, all these proportions are out of the 5 per cent of the age-group 17-23 in the population who in the first place get to pursue some form of higher education. Other aspects of this dysfunctionality are related to the lack of relevance of curriculum to the diverse and changing demands for specialised skills in production sectors, and lack of responsiveness of the university research programmes to the R&D needs of these sectors.

The production dynamics of agriculture in India is even today largely semi-feudal in nature, and as such that sector has not fully evolved to be an effective consumer of the skills and know-how that get generated in agriculture universities and research institutions. Seldom do graduates of these institutions go for actual farming; many of them land up with positions as corporate executives in agro-linked industries or as bureaucrats. Also, one is not sure as to how far the momentum that got generated during the green revolution years has been sustained later in, say, the so-called "lab-to-farm" transfer of knowledge through agriculture extension. The experience of the Land-Grant College of the United States could perhaps provide us with appropriate lessons about the possible linkages between university and the community.

Links with Industry

As for the Indian university's links with the Indian industry, the record has been somewhat better. Although one must hasten to add that whatever visible links exist are largely surface-level and are seldom structural and fundamental. Utilisation of graduates of Indian higher education as trained manpower for Indian industry is the most visible link. However, it is not very clear as to how far the skills that get generated through our curricular programmes are appropriate or adequate for many sectors of the Indian industry which are themselves in a state of flux. The relative importance of the general "pre-service" training provided by the university and the "on-the-job" training provided in-house by industries needs to be determined for various sectors and for various levels of functionaries.

It is still not a very common practice to have professionals from industry in university bodies, especially curriculum development bodies. If this is practised, it will ensure a firm basis for university-industry collaboration. Industries instituting "chairs" in universities, the university teachers offering consultancies to industries, and universities utilising the services of professionals in industry as visiting faculty constitute another dimension of the university-industry collaboration.

One other possible area of collaboration is incorporating work-experience in industry as an integral and on-going component of the curriculum. Internships and apprenticeships are already parts of the engineering curriculum; however, this component needs to be strengthened and made a continuing process throughout the curricular duration. In areas of skills in which industries have special interest, they could come forward to sponsor specific courses. Occasionally, industries do come forward to sponsor seminars and workshops among academicians of given specialisations. But, that has to be a regular practice. With greater flexibility introduced in the academic programmes of universities in terms of multiple-entry and multiple-exit arrangements, and by instituting special programmes of continuing education for specific sets of industrial functionaries, a much more meaningful relationship can be forged between university and industry.

One can't, of course, blame the university system alone for their lack of responsiveness. Without a comprehensive and continuous assessment of manpower requirement in various sectors and at various levels of skills (even if they may be approximate) being continuously fed back to the university system, it is perhaps impossible for it to adequately respond to the needs of the economy which is itself in a state of tremendous flux. Anna University is unique in the sense that it has demonstrated tremendous initiative and far-sightedness in offering academic programmes of great relevance to industries. The university has established an active collaboration with industry.

One other major possibility in the university-industry link is the one related to research. And, it is this dimension that leaves much to be desired. The research preoccupations of Indian universities are allegedly "too academic" and apparently indifferent to the problems and concerns of Indian industry. The governing research paradigms are essentially western. It is as though the Indian researcher is out to grab the first opportunity of joining any western bandwagon. The research preoccupations have often little to do with problems characterising the Indian reality. The concern is more to solve some esoteric western "paradigmatic puzzle" and gain a pat or two on the back from the patronising western professional peers than to be considered relevant and acceptable by practitioners at home. The Indian university system has thus been largely closed to collaboration with corporate R&D, not to mention its failure in addressing itself to the needs of the unorganised sectors of the Indian industry. Of course, most of the Indian industry, even the organised sector, has not shown much interest in investing in R&D. And,s the investment that the industry makes on university-based research is, needless to say, minimal. The prevalent notion that the State and its various organs constitute the sole source of funds for university research has to be replaced. Univ-ersities have to be increasingly persuaded to approach organised sectors of industry for funding research projects especially in areas where the sponsors have special needs. India's overall policy-disposition to R&D has been far from satisfactory. The developed countries have over 100 per thousand population engaged in science and technology while in

India it has been 4 per thousand. Most developing countries have more than 5 per thousand engaged in R&D; in India it has been a dismal 0.3. By any yardstick this is a very unsatisfactory situation.

In India, the State takes a tremendous lot of initiative in the knowledge business; it has established many premier institutions, nearly 40 of them under the aegis of CSIR and about 30 under ICAR. But these institutions are outside the ambit of the university system and this has, to a large extent, affected the level of excellence within the Indian higher education system. This has been observed even by scientists like Professor George Sudarshan. It has deprived the universities of their legitimate share of resource for scientific research. The system has increasingly found it difficult to retain some of its best talents within its faculties. This has also, to some extent, affected the organic link between good research and good teaching resulting in the dilution of quality of both teaching and research in the Indian university.

Economic Liberalisation

With the initiatives of the government of India towards greater economic liberalisation, the Indian economy and the Indian industry are on the verge of being exposed to international market forces. The already westward looking Indian industry, especially the knowledge-based ones, will now increasingly get entangled in an unequal relation, of a centre-periphery nature, with their western counter-parts. Indian higher education needs to redefine its role in this changed context. If it is not alert, this scenario could well confine it to preparation of middle level skills. It will in turn become increasingly vulnerable in its own peripheral position to possibilities of playing a subordinate role to its western counterparts. This could well be the beginning of a new and a much more pervasive kind of colonialism.

However, if Indian higher education, in a self-conscious manner, corrects its own ways and responds to the challenges of the day by acting as a social corrective and generating alternative development models which are more appropriate to local conditions and the changed realities in the international sphere, then it may perhaps still be able to save itself from being totally marginalised. One crucial role Indian higher education can play is to bridge the existing gap between the traditional repository of skills in the Indian society and the needs of a vibrant and growing modern economy, thereby integrating the core and the peripheral sectors of the economy, as well as the rural agro-based and the urban industrial sectors. This has to be attempted through an overhauling of the existing curricula. The overemphasis on liberal arts and the rigid examination system, the two major tenets of the colonial legacy inherited by Indian higher education, will have to be revamped; lateral and vertical linkages among curricular programmes also need to be established.

Another area where there is tremendous scope for change is in the management of research. For one thing, the harm done to research and postgraduate teaching in universities as a consequence of establishing research institutions outside the aegis of the university system has to be undone. These institutions have to be closely linked with the university system. Secondly, a more flexible approach may have to be tried out in collaboration with the Indian industry in R&D. Corporate investment in R&D to be vested with university departments has to be prompted more aggressively. The thinking that was reflected in the National Policy on Education 1986 to enforce an education cess on industry as a compensation for the human resource input they make use of may have to be revived. Also to be considered is the proposal to rationalise student fees.

A possible futuristic scenario of Indian higher education is punctuated with the possibility of greater entrepreneurship in higher education. Even today, there are instances where skills valued in the job market (such as computing) are offered by private institutions. This is a reality we must learn to cope with. One may have to think of integrative reconciliation of such ventures into the structure of our education system.

There is no conclusion to this discussion. Everything seems at the moment to be in a state of flux. The country is poised for great structural changes. The speed of these changes is a surprise to every one. During the last four and half decades we have got accustomed to certain ways of thinking and managing our institutions of higher learning. In the process, certain practices have become holy cows. The time has come to ask whether the holy cows are relevant to today. In view of the revolutionary changes sweeping the entire world, we need to study the implications of such changes for higher education in the country. To put it in a nutshell, we have to learn how to adopt and manage the changes. This exercise of introspection and reformulation of a world-view is imperative for the Indian higher education if it is to remain on the vanguard of the society.

This is a rough sketch of the context in which I "situate" my talk this afternoon. Despite all its imperfections, there is still in the system enough "elbow-space" for each one of us to articulate our respective special competence in order to leave it a little better and more humane than how we found it, and perhaps even to structurally change it for the better.

Mr. Chancellor, I would like to conclude in the words of Tiruvalluvar:

"Delivering an address of ....counsel to men of understanding is like watering the roofs of living plants"

Or to quote Mr. Aneurin Bevan:

"This is my truth ....Now you seek your own".

CABE Meets at Delhi

Inaugurating the two-day meeting of the Central Advisory Board of Education (CABE) held in New Delhi recently, the Human Resource Development Minister, Mr Arjun Singh, said frequent changes in the education policy were not good. He said while review was necessary, time had come to put an end to the uncertainty over the policy. He emphasised that the National Policy on Education, 1986, was basically sound and could provide the momentum for the development of education.

Mr Singh referred to the explosion of knowledge around us which was posing a challenge to our education system. Fast changing world was making it necessary for keeping abreast with the developments.

Addressing the meeting the Information and Broadcasting Minister, Mr. Ajit Kumar Panja, emphasised the need for a second national channel on Doordarshan for education, sports, science and technology. Kepping in view the importance of a separate channel for this purpose, he called for a strong recommendation by the CABE in this regard. Assuring the members of all assistance from various media units of his Ministry, Mr Panja suggested that a group might be set up to suggest guidelines for radio and TV to further the objectives of the National Education Policy.

The two-day meet also discussed the recommendations of the committee constituted by the Central Advisory Board of Education (CABE) with Andhra Pradesh Chief Minister, Mr. N. Janardhan Reddy, as Chairman to examine the Acharya Ramamurthi committee report which had reviewed the National Policy on Education (NPE) of 1986.

Continuation of the Navodaya vidyalaya scheme, strengthening of the vocational education and introduction of the concept of self financing for higher and technical education are some of the improtant recommendations of the Janardhan Reddy committee on education.

The committee report broadly endorsed the NPE with some modifications. However, the committee felt that the programme of action needed revision taking into account the recommendation of the Ramamurthi report.

Mr. Janardhan Reddy said that the members of the CABE were very receptive to most of the 89 recommendations of the committee. He said that the committee was of the view that implementation was a pre-requisite rather than making substantial changes in the NPE.

The committee felt that it was time to make national integration, a main objective of the education policy. In this context, it was suggested that the open school concept which is being implemented successfully in Andhra Pradesh, be launched at the national level. This, the committee felt, would not only enable students to pursue education in other States, but also would give a fillip of the continuation of education scheme.

Mr. Janardhan Reddy said that the committee was of the view that every effort should be made to ensure that the Constitutional obligation for providing free and compulsory education up to age of 14 years becomes a reality by the turn of century. The committee recommended the creation of specialised educational tribunals for redressing grievances of the staff.

The committee called for according highest priority to education during resource allocation and said that education should not be treated as a residual sector in the matter of allocations. It recommended need-based financing for priority sectors like universalisation of elementary education, adult literacy and vocationalisation.

Referring to the Navodaya vidyalayas scheme, Mr Janardhan Reddy said that apart from recommending the continuation of the scheme, committee felt that a vidyalaya should be set up in each district. However, the committee called for constant review of the scheme so as to make it cost effective, and suggested the formulation of a scheme for Central funding of residential schools.

The committee also mooted the idea of a two-year composite programme for students who complete the plus two stage, comprising paramilitary service, development of vocational and professional skills and extension work in rural areas. This programme, if implemented, would reduce the pressure on the university system. However, the committee felt that a national dialogue should be initiated on the issue before implementation.

Mr. Janardhan Reddy said that with regard to technical education, the committee felt that the State governments should be given a greater say in the functioning of All India Council of Technical Education (AICTE). The committee strongly recommended delegation of powers to the regional committees of the AICTE with the State government representatives acting as chairmen by rotation.

He said that the concept of self financing for higher and technical education was mooted primarily to ease the burden on the States. The concept merely implied that the students who could afford to pay for their education should do so, while the States should fund the education of economically weaker students.

The committee further called for streamlining of the recruitment and training of Anganwadi workers so that they play a more effective role in the system.

Credit-based Curriculum in Anna Varsity

The Academic Council of the Anna University is reported to have decided to introduce credit based curriculum for the eight-semester B.E./B.Tech. degree programmes from the academic year 1992-93. At present, the credit system is being adopted only in some institutions of higher learning such as the Indian Institutes of Technology.

The system envisages a relative weight (credit) assigned essentially on the basis of the contact periods of the course per week. A student is eligible for the conferment of the degree only if he/she earns the minimum number of credits (ranging from 175 to 180) for the different branches of engineering and technology, and also successfully completes all the core courses.

Under the system the student can register for less or more courses than those listed in the curriculum for a semester so as to learn at his or her own pace and has the option to choose electives from a wide spectrum of subjects. The system has a built-in scheme for continuous assessment of the students' progress and permits migration of students from other universities or even from other countries. A grading scheme with a seven point scale introduced with the system will give the Cumulative Grade Point Average (CGPA) obtained by the student revealing clearly his/her level of achievement in the programme.

Workshop on Industrial Pollution

The International Society for Environmental Protection organised a workshop on "Industrial pollution with special reference to sugar mills and distilleries at the Gorakhpur University recently. Dr. V.P. Dehadrai, Dy. Director General, Fisheries, Indian Council of Agricultural Research, New Delhi inaugurated the workshop while Prof. V.S. Pathak, Vice-Chancellor, Gorakhpur University presided. In his address Dr. Dehadrai said that pollution caused to the acquatic resources of the country by indiscriminate growth of industry was greatly damaging not only to the economic benefits from its exploitation or social stress it inflicts, but also in terms of loss of our cherished heritage of flora and fauna, thus degrading the environment and affecting the quality of life. The widespread pollution coupled with the population growth had rendered the availability of desirable quality of water a rare commodity. Dr Dehadrai said that while the oceans were the final receptacles of waste materials, the rivers and estuaries were their carriers being freely used for the disposal of sewage and industrial affluents. These water resources had direct bearing on agricultural irrigation and fisheries. He further said that presently the oceanic pollution was becoming quite a serious problem.

Dr S.A. Abidi, Director, Ocean Development, Govt. of India, emphasised the need of installing pollution prevention equipments in industries. Asserting that the environmental conditions had considerably deteriorated and this was resulting in basic changes in the climate, he said that every year 60 lakh hectares of agricultural land was becoming barren all over the world and about 11 lakh hectare forests were destroyed. Besides, due to acid rain, forests and lakes were adversely affected in many parts of the world, he added. He felt that due to massive felling of trees and due to their use as fuel, carbon dioxide was accumulating in the atmosphere. He emphasised the need of creating mass awareness regarding the dangers of pollutions as it would not be possible to check it without the people's support and active involvement.

In his presidential address Prof. V.S. Pathak said that the tendency of science to enslave nature was taking the world towards destruction. Industrial revolution had changed the thinking of man and he had gone far away from nature. He said that imported thoughts and models of development gave rise to the environmental problems in the country.

Refresher Programmes for Economics Teachers

The Academic Staff College of Bihar University, Muzaffarpur, organised two refresher courses of three weeks each for teachers of Economics. The first refresher course on Quantitative Techniques of Economic Analysis was inaugurated by the noted economist Dr. D. Guru, Professor, A. N. Sinha Institute, Patna. In his address Dr Guru stressed that the teachers of Economics should be aware of the basic ideas and techniques of Mathematics and Statistics for a better understanding and teaching of current economics literature. The study of modern economics was incomplete without formal knowledge of mathematics and statistics. In view of the increasing complexity and variety of problems in economic theory, a teacher without a fair grounding in these tools, may not be able to cope and may remain unfamiliar with many aspects of economic theory. Dr. Guru emphasised that learning to use mathematical and statistical techniques did not require elaborate mathematical preparation.

The main thrust of the programme was to make the teacher participants familiar with some of the basic statistical and mathematical tools as applied to economics so that they could use them after receiving the training in their teaching skills. Seminars on current topics, project work, group discussions were also conducted during the course for improving the general awareness, subject competence and personality of the teachers.

In his valedictory address Professor G.S. Monga, Professor of Economics, Bombay University opined that this exposure must have instilled a sense of confidence in the participants. Also, the training imparted will help the teachers of economics to understand the current economic literature in a better manner. Dr. P. N. Singh, Professor of Economics, Bihar University, Muzaffarpur and Course Co-ordinator presented his report and proposed a vote of thanks.

The second Refresher Course on Micro Economics Analysis was inaugurated by Mr. S.C. Bandhopadhaya, Zonal Manager, Central Bank of India, Muzaffarpur, who in his address highlighted the importance of such refresher courses for the college teachers. He emphasised the present banking scenario of Bihar.

The main thrust of this course was to acquaint the teacher participants with some of the recent developments that had taken place in the field of micro economics which may serve as a connecting link between what is generally taught in micro economics in the courses of studies and an ever growing body of literature on micro economics. Emphasis was also laid to provide them with some basics on managerial economics too. It was aimed to build up their analytical skill and refresh their memories. Seminars and project work were introduced for improving the general awareness, subject competence and personality of the teachers.

National Museum Institute Convocation

Mr Arjun Singh, Union Minister for Human Resource Development, said it was a unique concept to conduct specialised courses for the study and research of our cultural heritage and to learn about preservation of our precious possessions. He said though there were a number of universities and institutes which conducted studies on cultural heritage, this institute was unique as it had been created by its museum, the National Museum and followed the holistic approach for study of all facets of culture. It was this integrated approach towards art and culture that made it stand apart, Mr Singh said, while addressing the gathering at the convocation of the National Museum Institute of History of Art, Conservation and Museuology held in New Delhi recently.

Professor M.S. Agwani, Vice-Chancellor of the Jawaharlal Nehru University, who delivered the convocation address, said the founding of this University-level institution marked a recognition of the tremendous potential that the museums held for our educational system at all levels and of the need to introduce professionalism into the field of museum management.

He said no living enterprise of teaching and learning could remain aloof from what went on in the wider society. And no nation could insulate itself from the currents and cross-currents that shaped the course of events in the wider world without jeopardy to its own well-being and survival.

Stressing the need to allocate the necessary resources for education, Prof Agwani said the stunning pace of changes defined the tasks the country must set in the field of education. With all its strengths and weaknesses, our university system did provide the society, over the last four decades, with competent men and women, he said adding that at the same time, rapid expansion of higher education unattended by adequate investment in the necessary infrastructure had told adversely on the quality of teaching and research.

The Vice-Chancellor of the Institute and Director of Museum, Dr. R. C. Sharma revealed that the National Museum Institute on attaining the status of a Deemed University had made tremendous progress during the last three years. the Institute had introduced a multiple examination system viz. slide initiation, seminar papers, objective type questions and workbooks – a system which had been widely acclaimed by the University Grants Commission.

Outlining some of the new schemes to be shortly introduced, Dr. Sharma said Institute would start an M.Phil course besides an advance course in Indian Sculpture and Architecture for those who have completed Art Appreciation Course. A course by the name of Bhartiya Kala Nidhi in Hindi medium would also started, he said.

The Institute would also enter into academic collaboration with the Smithsonian Institute, Washington. It has been awarded Endowment Chairs of Professors by the Government of Madhya Pradesh in the name of late D.P. Mishra and by Indian Council of Cultural Relations in memory of Maulana Abul Kalam Azad.

Thirteen students received their postgraduation degrees in History of Art and Conservation from the Minister of Human Resource Development, Mr Arjun Singh, who is also the Chancellor of the Institute. Three students, Mr. S. Giri Kumar, Mr Sampa Biswas and Ms. Mandana Berkeshli, an Iranian national, were also awarded gold medals.

PMPT-92

The Materials Science Centre of the Indian Institute of Technology Kharagpur, will organise a QIP Short Term Course on Polymeric Materials Product Technology (PMPT-92) from 14-31 December, 1992.

The Materials Science Centre, IIT, Kharagpur is engaged in synthesizing, characterizing of advanced polymeric materials, electronic materials, ceramics and composites with a view to establish structure-property correlations with special reference to various end applications.

The course has been developed by taking into consideration the various interacting chemical, physical and technological aspects to provide an insight into the specialized behaviour of polymeric materials. It is envisaged to stimulate, generate and evolve curiosity thought process among the participants and provide educationists/technologists/teachers from participating engineering colleges sufficient knowledge and foundation to develop new course materials/curricula at UG/PG levels with a strong bias towards applied research and technology. The structure and content of the course will also provide a useful guideline on product formation/tailoring to professionals and entrepreneurs working on polymeric materials. The course will be supplemented by outside reading, problem/laboratory sessions and industrial visits. After an overview of polymeric materials with reference to various generalized topics (like its chemistry, principles of plymerization etc.) conceptual details of polymeric materials science and technology will be introduced followed by detailed discussions on Product Formation & Tailoring Technology. The course is highly interdisciplinary in nature and thus lectures will be delivered by specialist faculty of this institute and also by experts from other educational institutions, R & D organisations and industries.

The course, content includes : I — Overview & Introduction to Polymeric Materials; II — Polymeric Materials Science : (i) Theories of Solution, (ii) Molecular weight and its Distribution, (iii) Microstructure and its Analysis; (iv) Thermal characterisation; (v) Morphology; (vi) Mechanical Behaviour (vii) Electrical Properties; (viii) Photoconducting Properties; (ix) Surface and Interfacial Aspects; (x) Science of Adhesion; III — Product Technology; (i) Synthesis and Reactor Technology, (ii) Rheology; (iii) Processing and Computer Application to processing; (iv) Polymer Mixing Technology; (v) Additives; (vi) Product Design, (vii) Physical Testing versus Product Application; (viii) Environmental Stability (ix) Adhesive Technology; (x) Surface Coating Technology; IV — Product Tailoring : (i) Optical Fiber Coating; (ii) Polymeric Photoresist; (iii) Polymers for Information and Storage Technogy; (iv) Polymers in Packaging; (v) Polymers for High-Temperature Applications, (vi) Industrial Adhesives, (vii) Engineering Plastics; (viii) Polymeric Biomaterials; (x) Polymer Batteries; (xi) Drag Reducing Polymers, Biodegradable Polymers.

Further information may be had from Dr. Ajit Banthia, Co-ordinator, PMPT-92, Materials Science Centre, Indian Insitute of technology, Kharagpur-721302.

Workshop on Ancient Indian Scripts

The School of Vedic Studies of the Rabindra Bharti University organised a Workshop on Ancient Indian Scripts to commemorate the death centenary of Raja Rajendralal Mitra. The object of the workshop was to train some researchers in reading three scripts used in many manuscripts of Sanskrit texts.

Prof Dr. Bratindra Nath Mukhopadhyay, the Chief Guest at the inaugural session, delivered a lecture on "Evolution of Ancient Indian Scripts", and the Vice-Chancellor, Prof. Pabitra Sarkar, who presided over the inaugural session, spoke on Graphology. Thirty participants received instruction in the Grantha script, eighteen out of them in Newari and twelve in Medieval Bengali as the second script at the said workshop.

The courses of instruction in Grantha and Newari scripts were conducted by Dr Ratna Basu (Reader in Sanskrit, Calcutta University) and the course of instruction in the Medieval Bengali script was conducted by Dr Debnath Bandyopadhyaya and Dr Kananbehari Goswami (Readers in Bengali, Rabindra Bharati University).

Prof. Anantalal Thakur, the Chief Guest at the closing session spoke on the "Problems of Reading Sanskrit Manuscripts" and the Vice-Chancellor, Prof. Sarkar, Chairman of the Session, gave away the certificates to the participants.

The Session concluded with a beautiful Sanskrit hymn sung by Dr. Ruma Bandyopadhyay.

Hari Om Ashram Alembic Research Award 1992

The Management Committee of the Hari Om Ashram Alembic Research Award Fund invites nominations for the Hari Om Ashram Alembic Research Award, 1992. The nomination may be made in the following categories:-

(1) Basic Research in Medical Sciences : This will incorporate research work done on any aspect of the understanding of the fundamental phenomena pertaining to medical sciences.

(2) Applied Research at : (i) Field Level : This would incorporate the application of the existing knowledge, a systematic analysis thereof and suitable modifications carried out which has resulted in. an appreciable benefit to the country; and (ii) Research carried out by Group/Institution/Organisation in the field of Medical education/health problems.

The value of each award is Rs. 10,000/- and a Medal.

Nominations can be made by the Professor of a candidate, Professional societies, established experts in various industries, Chancellors/Vice-Chancellors of the Universities, Chairman, University Grants Commission, director of recognised research institutions or organisations namely Indian Council of Medical Research, Council of Scientific and Industrial Research, Deans of the Faculty of Medicine of the Universities, National Organisation of Medical Profession, Indian Science Congress, Members of the Medical Council of India, who must not be related either by blood, marriage or adoption to the person making a nomination or seconding the proposal. They may not have played any direct part in the nominee work. The nominator should give complete bio-data of the nominee regarding his academic career, the position held and the nature of the scientific work done by the candidate. The person making the nomination will indicate briefly reasons for the nomination and mention specifically the contribution made by the candidate.

The nominations may also include (i) one set of the published papers in respect of the field of research done by the candidate for which he is being nominated; and (ii) 35 sets of bio-data, full address for communication, list of publications and other relevant matter.

The last date for receipt of Nominations is July 31, 1992 and these may be sent to the Secretary, Hari Om Ashram Alembic, Research Award Fund, Office of the Medical Council of India, Aiwan-e-Galib Marg, Kotla Road, New Delhi 110002.

Dr. B.C. Roy National Award 1992

The Management Committee of the Dr. B.C. Roy National Award Fund invites nominations for Dr. B.C. Roy National Award 1992 in the categories of (1) Statesmanship of the Highest Order in our country, (2) Medicalman-cum-Statesman, (3) Eminent Medicalman, (4) Eminent person in Literature, (5) Eminent person in Art, (6) Eminent person in Philosophy, and (7) Eminent person in Science.

Nominations may be forwarded through the respective Chief Minister, Chancellor or Vice-Chancellor of Universities, Chairman of the University Grants Commission, Directors of viz. ICMR, CSIR, ICAR, etc., Deans of the Faculty of Medicine, National Organisations of the Profession, Recognised Engineering Institutes, Indian Science Congress, Members of the Medical Council of India.

Special priority in making the Award shall be accorded to the objective of granting an award to a Medicalman-cum-Statesman, a person of nationwide eminence and popularity and who has contributed a great deal of service to the nation in different spheres of activity. The Award may be made to an individual or to an institution.

The Nomination should be supported by the following : (i) 30 copies of curriculum vitae of the candidate and full address for communication; (ii) A statement of the work achievement accomplishment or performance on which the claim to the award is based; (iii) One set of Publications; (iv) A reasoned justification for the nomination; and (v) Consent of Nominee.

Persons who had been nominated earlier and not selected for these awards are eligible for renomination.

The nomination must reach the office by 31st July, 1992, positively by registered A.D. Nominations may be sent in a sealed cover marked 'Confidential' to Dr. (Mrs.) M.Sachdeva, Secretary, Dr. B.C. Roy National Award Fund, Aiwan-e-Galib Marg, Kotla Road, New Delhi - 110002.

Medical Varsity in Each State

A medical university in each State was necessary to promote quality research and provide scope for various specializations, said Dr. Lalita Kameshwaran, Vice-Chancellor of the Dr MGR Medical University in Bangalore, recently. She was delivering the keynote address at the national workshop of medical education, organised by the

Indian Medical Association, with the focus on the need for university of health sciences. Dr Kameshwaran pointed out that in a general university there was usually one undergraduate and one postgraduate board of studies. Most of the teachers felt that they had no say in academic decisions. But under a medical university, several boards of studies could be created, she said.

Such a university in each State would also act as an co-ordinating agency which could deal directly with the Medical Council of India. She sought to correct the general impression that a medical university would be a unifaculty establishment.

She pointed out that a separate university with full-time research institutes could be the conduit for financial aid from national and international funding agencies. Health universities in the country did not receive Central assistance. She hoped that when an education commission for health sciences was formed, it would provide a boost to medical and health sciences education.

Varsity for Promotion of Punjabi Ethos

Dr H.K. Manmohan Singh, Vice-Chancellor of the Punjabi University, proposed an independent university exclusively for the development of the Punjabi language, culture and ethos. In his inaugural address delivered at the three-day Punjabi development conference held at Patiala recently, Dr Singh said that such a university should be on the pattern of the Telugu University in Andhra Pradesh which has been working for the promotion of the Tulugu language and culture.

He said the several government and non-government organisations were working for the promotion of the Punjabi language but an agency for coordination among these organisations to achieve better results was needed.

He said that the Punjabi University had published 1500 books, so far, and wanted to keep eminent Punjabi writers on the campus where they would be given respectable honorarium so that they could enrich Punjabi literature. He also urged the government to institute a "gnanpeeth" type award for excellence in Punjabi literature.

Dr B.S. Nanda, Head of the Punjabi Development Department said that the Punjabi University would start teaching of Punjabi to foreign nationals interested in the language. The main aim was to spread Punjabi beyond the State and the country, he added.

Dr Amrik Singh, former Vice-Chancellor, Punjabi University, who presided over the conference said to enrich the Punjabi vocabulary, words from other languages would have to be taken. He said that doors should be opened to welcome words from other languages for assimilation in the Punjabi vocabulary. He said that other languages of the world including English has also absorbed words from other languages and for this reason it was one of the richest languages of the world. He said that full attention should be paid to school-level for the proper teaching of Punjabi.

Dr Jaswant Singh Neki, who presented a paper on "Modern Punjabi Poetry – an evaluation" said that progress of the modern Punjabi poetry could not be possible by breaking it away from the traditional Punjabi poetry. He said that modernity was not opposed to tradition but it is climax of the development of the new modernism.

News from Agricultural Universities

Summer Institutes in Agricultural Sciences

The Indian Council of Agricultural Research will hold 24 Summer Institutes/Short Courses in the field of Agricultural Sciences during May-July, 1992 for the benefit of teachers, research workers and extension workers, particularly the subject matter specialists. The main objective of these inservice training courses would be to communicate the latest technologies and advances in the subject and provide the necessary orientation to teachers and research workers of Agriculture/Agricultural Engineering/Animal Sciences/fisheries so that they are able to relate the teaching of their subject to the problems in their respective disciplines. The Council has undertaken to meet the expenses for organizing these Summer Institutes/Short Courses.

It would be possible to accommodate one or two from the sponsored list of teachers, researchers and extension specialists from a University/College/Institute/Department who are actively engaged in teaching/research or extension education in the respective subjects.

Further details about the courses, eligibility, application form, etc., may be obtained either from the University/Institute concerned or from the Office of the Principal Scientist(S.I), Indian Council of Agricultural Research, Krishi Anusandhan Bhawan, Pusa, New Delhi-110012.

Water Resources Day

Mr. Hardharan Singh Brar, Minister for Irrigation and Power, Punjab, inaugurated a State level Water Resources Day at Punjab Agricultural University. In his address Mr. Brar said that the irrigation water played a crucial role in the quantum jumps in agricultural production in the State. He noted that the irrigation demands of the State were almost double the total water resources available and cautioned that if immediate steps were not taken to arrest the decline of water-table, the State would have to face serious consequences of reduction in agricultural production.

Dr. Khem Singh Gill, Vice-Chancellor of Punjab Agricultural University, while presiding over the function said that water management problems being faced by the State needed objective evaluation and solution to sustain agricultural production. Dr. Gill noted that intensive agriculture had resulted in decline of water-table at the rate of 20 cm per year. While in the salt affected South-Western districts, the water-table has been rising thereby posing a problem of water logging and salinity.

Mr. Gill discussed in detail water management strategies that need to be followed for agricultural planning with a view to ensure sustainable agricultural production in the State.

Mr. G.P.M. Sahi, Secretary Irrigation and Power, Punjab, gave a brief account of steps being taken by the Irrigation Department to enhance the availability of irrigation water.

Dr. G.S. Gill, Director of Extension Education, called for creating awareness among farmers regarding judicious use of water. He pointed out that the University had developed a number of varieties which needed less irrigation water. Dr. A.S. Khera, Director of Research, PAU, welcomed the Chief Guest while Dr. K.S. Aulakh, Dean, College of Agriculture, proposed a vote of thanks.

An exhibition highlighting the achievements and programmes in water management was also put up by various departments of the PAU, Punjab State Tubewell Corporation and Punjab State Remote Sensing Centre. On this occasion a book on Canal System of Punjab Region and monthly journals of PAU - *Changi Kheti* and Progressive Farming were also released.

News from UGC

Countrywide Classroom Programme

Between 25th May to 3oth May 1992 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 1.00 p.m. to 2.00 p.m. and 4.00 p.m. to 5.00 p.m. The programme is available on the TV Network throughout the country.

1st Transmission

1.00 p.m. to 2.00 p.m.

25.05.92

"C.P. Violation"
"New Industrial Policy"

26.05.92

"Hygiene Plus Disease Minus"
"Contract Act - IV"
"Pharmacy in Modern India"

27.05.92

"Corrosion-I"
"Tropical Cyclones-II"
"The Pest Story-II: Biological Control of Water Hyacinth"

28.05.92

"Communicating Communication-I: Origins of Communication"
"Beauty, Truth and Life: Keat's Grecian Urn"

29.05.92

"We, The People---V: Poverty Plan and The Constitution"
"Learning About Foreign Languages"
"Echolocation of Bats"

30.05.92

"The Pursuit"
"Yours Sincerely"
"The Week Ahead"

IInd Transmission

4.00 p.m. to 5.00 p.m.

25.05.92

"Wind Power"
"New Trade Policy"
"Quality Circles"

26.05.92

"Black Diamond:Buck Minister Fullerene"
"Education for Equality-II"
"Siege of English"

27.05.92

"Innovation: A Sound Idea"
"Numismatics"
"Tips on Saving Fuel"

28.05.92

"Electronics-III: Transistor Characteristics"
"The Changing Nature of Wetland"
"19th Century Russian Literature: Works of Pushkin"

29.05.92

"Number Systems"
"Prof. John: Profile of an Educationist"
"A Seven Point Action for Malaria Control in Madras"

30.05.92

"Yours Sincerely"
"The Pursuit"
"The Week Ahead"

RESEARCH IN PROGRESS

A list of Research Scholars registered for Doctoral Degress in Indian Universities.

SOCIAL SCIENCES

Library & Information Science

1. Singh, Lalmani Prasad. **Professional attitude of professional library personnel.** BHU. Dr S N Singh, Department of Library Science, Banaras Hindu University, Varanasi.

Journalism

1. Singh, Raj Kishor. **The constitutional dimensions of the Freedom of Press in India.** BHU. Dr H A Azmi, Department of Journalism, Banaras Hindu University, Varanasi.

Psychology

1. Archana Kumari. **Neuropsychological concomitents of behaviour disorders.** BHU. Dr A K Srivastava, Department of Psychology, Banaras Hindu University, Varanasi.

2. Bose, Swapna. **Stress, inability to alleviate: A study of patients suffering cancer.** BHU. Dr A Mukhopadhyay, Department of Psychology, Banaras Hindu University, Varanasi.

3. Jain, Ranjana. **A comparative study of psychological stress and social support among employed and unemployed women.** BHU. Dr Reeta Verma, Department of Psychology, Banaras Hindu University, Varanasi.

4. Madan, Sanjay Kumar. **Laterality and psychopathology.** BHU. Dr M K Mandal, Department of Psychology, Banaras Hindu University, Varanasi.

5. Pandey, Nilam. **Stress among working women.** BHU. Dr A P Singh, Department of Psychology, Banaras Hindu University, Varanasi.

6. Rakesh Kumar. **Stressful life events of psychiatyrically diabled patients and their personality correlates: A comparative profile.** BHU. Dr A Mukhopadhyay, Department of Psychology, Banaras Hindu University, Varanasi.

Sociology

1. Alok Kumar. **Bouddhmat ke sandarbh mein Bhartiya vargon evam rajya ka vikas.** BHU. Dr M K Chaturvedi, Department of Sociology, Banaras Hindu University, Varanasi.

2. Anand, Shankar Dayal. **Grameen abhijanon ka samayik udbhav evam shakti sanrachna ke nav udbhav pratiman: Case study of Bihar.** BHU. Dr S R Yadava, Department of Sociology, Banaras Hindu University, Varanasi

3. Jaiswal, Alka. **Mahilayen evam kanoon.** BHU. Dr (Mrs) S Jetly, Department of Sociology, Banaras Hindu University, Varanasi.

4. Janardan Singh. **Samajik parivartan aur Mahatma Gandhi.** BHU. Dr J N Singh, Department of Sociology, Banaras Hindu University, Varanasi.

5. Lallan Singh. **Dynamics and rural transformation.** BHU. Dr A L Srivastava, Department of Sociology, Banaras Hindu University, Varanasi.

6. Mourya, Babban Prasad. **Some aspects of study of human fertility.** BHU. Prof R C Yadava, Department of Statistics, Banaras Hindu University, Varanasi.

7. Pathak, Jai Prakash. **Grameen rupantaran mein sanchar madhyamon kee bhoomika.** BHU. Dr P N Pandey, Department of Sociology, Banaras Hindu University, Varanasi.

8. Singh, Devendra Kummar. **Bihar Rajya mein Berari Prakhand ke antargat Vihera jatiyan sanghare ka samajvaigyanik adhyayan.** BHU. Dr Vishnu Gopal, Department of Sociology, Banaras Hindu University, Varanasi.

9. Singh, Lal Bahadur. **Inferences for finite propulations.** BHU. Dr V K Singh, Department of Statistics, Banaras Hindu University, Varanasi.

10. Singh, Ram Prakash. **Grameen sangharsh aur ashanti: Grameen prajatantrik vyavastha mein sangharsh.** BHU. Dr S R Yadava, Department of Sociology, Banaras Hindu University, Varanasi.

11. Singh, Sudhir Kumar. **Shramkalyan ka swaroop evam Bhartiya chini udyog: Rasra Sahkari Chini Mill per adherit ek samajvaigyanik adhyayan.** BHU. Dr J K Tiwary, Department of Sociology, Banaras Hindu University, Varanasi.

12. Sudhir Singh. **Grameen vikas karyakram aur swasthya kee chetnatmak sthiti.** BHU. Prof S Tripathi, Department of Sociology, Banaras Hindu University, Varanasi.

13. Upadhya, Vidya Dhar. **Some aspect of rural out migration.** BHU. Prof R C Yadava, Department of Statistics, Banaras Hindu University, Varanasi.

14. Wahi, Amit. **Estimation problems in finite populations.** BHU. Dr V K Singh, Department of Statistics, Banaras Hindu University, Varanasi.

Political Science

1. Abhay Singh. **Rashtravad aur Vivekanand.** BHU. Dr C K Padia, Department of Political Science, Banaras Hindu University, Varanasi.

2. Das Gupta, Rumni. **A critical study of functioning of West Bengal Government, 1977 to present.** BHU. Dr R R Jha, Department of Political Science, Banaras Hindu University, Varanasi.

3. Prabhakar, Poonam. **International politics: The US diplomacy in the Third World with special reference to South Asia.** BHU. Prof P D Kaushik, Department of Political Science, Banaras Hindu University, Varanasi.

4. Singh, Kiran. **Kashmir samasya ka rajanitik vishleshan.** BHU. Dr K K Mishra, Department of Political Science, Banaras Hindu University, Varanasi.

Economics

1. Santha Devi, P B. **Models of teaching economics at collegiate level.** Kerala. Dr R Ramachandran Nair, Director, Academic Staff College, University of Kerala, Kariavattom and Dr B Vijaya Kumar, Assoc Director, Academic Staff College, University of Kerala, Kariavattom.

2. Shajahan, K M. **Inland fish economy of Kerala: A case study of Vembanad Lake.** Kerala. Dr Nata Duvvry, Joint Director, Centre for Development of Imaging Technology, Thiruvallom.

3. Sreekumar, B. **Spices economy of Kerala: An econometric analysis.** Kerala. Dr C Radhakrishnan Nair, Department of Economics, University of Kerala, Kariavattom.

4. Usha, S. **Economics of health care.** Kerala. Dr S Uma Devi, Department of Economics, University of Kerala, Kariavattom.

Law

1. Mishra, Sannivesh. **Legal perspectives of investment by multinational corporations in Indian context.** BHU. Dr Surendra Nath, Department of Law, Banaras Hindu University, Varanasi.

2. Rai, Sheetala Prasad. **Criminal liability of companies under the Companies Act 1956.** BHU. Dr Surendra Nath, Department of Law, Banaras Hindu University, Varanasi.

Education

1. Avtar Singh. **Teacher burnout in relation to organizational climate and leadership behaviour of the high school principals as**

perceived by teachers. Panjab. Dr (Mrs) Asha Gupta, Reader, Department of Education, Panjab University, Chandigarh.

2. Bajwa, Gurpreet Kaur. **A study of selected psycho-physical attributes as related to the performance in shooting.** Panjab. Dr N S Mann, Department of Physical Education, Panajab University, Chandigarh.

3. Devendra Singh. **Varanasi Mandal mein alpa sankhyakon dwara sanchalit shiksha sansthaon ka adhyayan.** BHU. Dr H K Singh.Reader, Department of Education, Banaras Hindu University, Varanasi.

4. Dhanoa, Harminder Singh. **Attitude towards teaching profession among student-teachers in relation to their self- concept, values and cognitive style.** Panjab. Dr G S Sodhi, Department of Education, Panjab University, Chandigarh and Dr Sunil Dutt, Sohan Lal College of Education, Ambala City.

5. Kapur, Rajinder Prashad. **A cross cultural study of job attitudes and organizational commitment among American and Indian school teachers in relation to organizational culture, organizational structure, leadership styles and social norms.** Panjab. Prof Harish Sharma, Department of Education, Panjab University, Chandigarh and Dr (Ms) S K Jindal, Reader, Department of Education, Kurukshetra University, Kurukshetra.

6. Latika. **The development of adult continuing and extension education in universities of Maharashtra State during the post independence era.** Panjab. Dr (Mrs) Savita Markanda, Department of Education, Panjab University, Chandigarh.

7. Pandey, Vineeta. **A comparative study of impact of school going and non-entrance school going tribal and non-tribal mentally retarded children in family.** BHU. Dr P C Shukla, Lecturer, Department of Education, Banaras Hindu University, Varanasi.

8. Radhalekshmi, V. **Preparation and testing of self-learning modules in genetics at the degree level.** Kerala. Dr J Exemmal, Asstt Director, Academic Staff College, University of Kerala, Thiruvananthapuram.

9. Sangha, Surinder Singh. **A comparative study of creative talent among intellectually gifted and average children in relation to selected socio psychological variables.** Panjab. Dr Harnek S Kaile, G H G Khalsa College of Education, Gurusar Sadhar, Ludhiana.

10. Satwant Kaur. **Management styles of polytechnic principals and their effect on organizational climate, morale of staff interaction with the industry and performance and employability of polyteaching product.** Panjab. Prof M M Malhotra, Head, Department of Education, T T T I, Sector 26, Chandigarh.

11. Satyanarayana, V. **Analysis of selected motor components and physical variables to athletic performace.** BHU. Dr S S Sharma, Department of Physical Education, Banaras Hindu University, Varanasi.

12. Sharma, Meena. **Bouddhamat ke shaikshik mulya aur unka samalochantmak adhyayan.** BHU. Dr Kamala Rai, Reader, Department of Education, Banaras Hindu University, Varanasi.

13. Singh, Akhilesh Kumar. **Effectiveness of multimedia self instructional material in social studies for visually impaired children of class VI.** BHU. Dr H C S Rathore, Department of Education, Banaras Hindu University, Varanasi.

14. Singh, Sunita. **A comparative study of Hindu and Islamic philosophy of education.** BHU. Dr Tribhuwan Singh, Reader, Department of Education, Banaras Hindu University, Varanasi.

15. Thanarusk, Prapon. **Assessment of physical fitness of under- graduate students in Lannan United College, Thailand.** Panjab. Prof (Miss) Jatinder Bhullar, Department of Physical Education, Panjab University, Chandigarh.

Commerce

1. Dubey, Bikas Chand. **Bhartiya Rail: Aye evam vyaya kee pravritti.** BHU. Dr J S Mathur, Department of Commerce, Banaras Hindu University, Varanasi

2. Duggi Gouri Devi. **Customer service in banks: A case study.** BHU. Dr O P Rai, Department of Commerce, Banaras Hindu University, Varanasi.

3. Geevarghese, C. **An analysis of productivity in state enterprises in Kerala with special reference to Chemical Sector Industry.** Kerala. Dr Biji James, Lecturer, Department of Commerce, Kizhakathil, Peroorkada, Thiruvananthapuram.

4. Keshary, Arvind Kumar. **Performace of ICICI assisted companies.** BHU. Dr S P Srivastava, Department of Commerce, Banaras Hindu University, Varanasi

5. Krishnan, A P. **An evaluation of the working of the grameen banks in Kerala.** Kerala. Dr K Sasikumar, Lecturer, Department of Commerce, University of Kerala, Thiruvanathapuram.

6. Mabil, P S. **Bank finance under service area approach in Kerala.** Kerala. Dr K P Muraleedharan, Lecturer, Department of Commerce, University of Kerala, Thiruvananthapuram.

7. Singh, Anil Kumar. **Appraisal of labour welfare in coal industry: A case study.** BHU. Dr Dipak Malik, Department of Commerce, Banaras Hindu University, Varanasi.

8. Singh, Ashok Kumar. **Performace appraisal of major ports in India.** BHU. Dr Dipak Malik, Department of Commerce, Banaras Hindu University, Varanasi.

9. Singh, Chandra Bhushan. **Personnel practices in electronic indusry: A case study, Uptron India Ltd.** BHU. Dr A A Ansari, Department of Commerce, Banaras Hindu University, Varanasi.

10. Singh, Udai Pratap. **A critical study of Employees State Insurance Corporation and its impacts on social security in India.** BHU. Dr Manzoor Ahmad, Department of Commerce, Banaras Hindu University, Varanasi.

11. Syed Zabid Hossain. **Working capital management in the textile industry of Bangladesh: A case study.** BHU. Dr M N A Ansari, Department of Commerce, Banaras Hindu University, Varanasi.

12. Unuskutty, K K. **An empirical study on the paintation schemes financed by primary cooperative agricultural and rural banks in Kerala.** Kerala. Dr M Sarngadharan, Reader, Department of Commerce, University of Kerala, Thiruvananthapuram.

13. Upadhyay, Onkar Nath. **Management planning at an enterprise level: A case study of D L W Varanasi.** BHU. Dr Dipak Malik, Department of Commerce, Banaras Hindu University, Varanasi.

Management

1. Ashitha Prem Kumari, D. **Human resources management in colleges in Tamil Nadu.** Kerala. Dr John Pulparambil, Assoc Prof, Institute of Management in Government, Vikas Bhavan, Thiruvananthapuram.

2. Jyothisree, B. **An evaluation of export promotion programmes in Kerala.** Kerala. Dr R Gangadharan Nair, Reader, Institute of Correspondence Courses, University of Kerala, Kariavattom.

3. Kizhakakachukuzhiyil, George Mary. **Nature and financial management of electronic industry in Kerala.** Kerala. Dr R Gangadharn Nair, Reader, Institute of Correspondence Courses, University of Kerala, Kariavattom.

HUMANITIES

Philosophy

1. Hari Govind. **Sri Arvind, Tagore aur Gandhi ke manavwad ka sameekshatmak adhyayan.** BHU. Dr U C Dubey, Department of Philosophy and Religion, Banaras Hindu University, Varanasi.

2. Mehata, Arti. **Jaindarshan aur Shankardarshan mein jeev ke bandhan aur moksha ka tulnatmak adhyayan.** BHU. Dr Kanak Dwivedi, Department of Philosophy and Religion, Banaras Hindu University, Varanasi.

3. Mishra, Sunil Kumar. **Shankar aur Shri Arvind darshan mein adwaitwad.** BHU. Prof Kamlakar Mishra, Department of Philosophy and Religion, Banaras Hindu University, Varanasi.

4. Ojha, Prem Shanker. **Prama mimansa: Yukti Deepika ke vishesh sandarbh mein.** BHU. Dr Kripa Shanker, Department of Philosophy Banaras Hindu University, Varanasi.

5. Sharma, Saroj. **Mind-body interaction: Essential readings in biophilosophy.** BHU. Dr U C Dube, Department of Philosophy and Religion, Banaras Hindu University, Varanasi.

Religion

1. Mishra, Vedpati. **Vaishnav bhakti kee parampara aur Srimad Bhagwat.** BHU. Prof K N Mishra, Department of Philosophy and Religion, Banaras Hindu University, Varanasi.

Fine Arts

1. Amar Singh. **Muslim smarkon mein Hindu kalavishesh.** BHU. Dr D B Pandey, Department of History of Art, Banaras Hindu University, Varanasi.

2. Giri, Pramod. **Banaras kee prachin vastu kala.** BHU. Dr S K Srivastava, Department of History of Art, Banaras Hindu University, Varanasi.

3. Jain, Ranjana. **Shivgan aur Ganesh pratimayen.** BHU. Dr D B Pandey, Department of History of Art, Banaras Hindu University, Varanasi.

4. Singh, Rakesh Kumar. **Garhwal kaleen murtikala ka adhyayan.** BHU. Dr D B Pandey, Department of History of Art, Banaras Hindu University, Varanasi.

5. Singh, Vinay Kumar. **Bouddh tantrik dev pratimayon ka adhyayan.** BHU. Dr D B Pandey, Department of History of Art, Banaras Hindu University, Varanasi.

6. Srivastava, Sarika. **Uma Maheshwar aur Kalyansundar murtiyan.** BHU. Dr M N P Tiwari, Department of History of Art, Banaras Hindu University, Varanasi.

Music

1. Namrata. **Vartaman sandarbh mein khayal-gayaki ka vivechantmak adhyayan.** BHU. Dr Ritwik Sanyal, Department of Vocal Music, Banaras Hindu University, Varanasi.

Language & Literature

English

1. Arora, Kavita. **The theme of quest in the novels of R P Jhabvala.** BHU. Dr S R Jalote, Department of English, Banaras Hindu University, Varanasi.

2. Khare, Nupur. **The Black World of Nikk Giovanni: A feminist perspective.** BHU. Dr A Nigam, Department of English, Banaras Hindu University, Varanasi.

3. Malik, Suresh Kumar. **Theme of love in Indian novels in English.** BHU. Dr P K Pandey, Department of English, Banaras Hindu University, Varanasi.

4. Shukla, Ashima. **Elizabeth Fennings: Shifts in her sensibility.** BHU. Dr R K Shukla, Department of English, Banaras Hindu University, Varanasi.

5. Yadav, Lal Bahadur. **Nayantara Sehgal as a political novelist.** BHU. Dr R K Mathur, Department of English, Banaras Hindu University, Varanasi.

Sanskrit

1. Acharya, Vijay Das. **Kabircharitam Mahakavyasya samalochanatmakamdhyayanam.** BHU. Dr Kaushlendra Pandey, Department of Sahitya, Banaras Hindu University, Varanasi.

2. Chaturvedi, Vivekanand. **Jagdishgadadharbhattayoh siddhantlaksnavisaye matabhedvimarshah.** BHU. Dr G Anjanya Shastri.

3. Giri, Ratna. **Bhartiya sanskriti mein vratya kee awadharana.** BHU. Dr A K Singh, P V Research Institute, Varanasi and Dr J S L Tripathi, Department of Sanskrit, Banaras Hindu University, Varanasi.

4. Jha, Jivesh. **Vyaptipanchashatakoreh vyaptipanchakkrodpatrantraih sah tulnatmakamdhyayanam.** BHU. Dr G Anjanya Shastri

5. Jha, Mithilesh. **Pratipadi karya vivechan.** BHU. Prof S N Mishra, Department of Sanskrit, Banaras Hindu University, Varanasi.

6. Kalvint, Ranjana. **Akhyanakmanikesh: Ek sameekshatmak adhyayan.** BHU. Dr A K Singh, P V Research Institute, Varanasi and Dr R P Dwivedi, Department of Sanskrit, Banaras Hindu University, Varanasi.

7. Kalvint, Ranjana. **Tilakyashoarnvamahakavyasya sameekshnam.** BHU. Dr Shiv Dutt Sharma Chaturvedi, Department of Sahitya, Banaras Hindu University, Varanasi.

8. Prem Sahib. **Brhamsutrashankarbhasyatrityaadhyayasya sameekshatmakdhyayanam.** BHU. Dr Sudhanshu Shekhar Shastri, Department of Vedic Darshan, Banaras Hindu University, Varanasi.

9. Shukla, Rajendra Kumar. **Mahabharta Bhismparva sahityik paripekshya.** BHU. Dr Janardhan Upadhyaya, Department of Sahitya, Banaras Hindu University, Varanasi.

10. Shukla, Ravi Shanker. **Sankhyayogadristya Shrimadbhagvadgitayam Madhusudaniymkayah sameekshatmakdhyayanam.** BHU. Dr Krishan Kant Sharma, Department of Vedic Darshan, Banaras Hindu University, Varanasi.

11. Singh, Sheela. **Droupadi kathanak ka Jain aur Hindu stroton ke adhar per tulnatmak adhyayan.** BHU. Dr A K Singh, P V Research Institute, Varanasi and Dr R P Diwviedi, Department of Sanskrit, Banaras Hindu University, Varanasi

12. Upadhyaya, Arun Kumar. **Vedic sahitya mein mastraneem ka swarup vivechan.** BHU. Dr Vyas Mishra, Department of Veda, Banaras Hindu University, Varanasi.

Hindi

1. Ayodhya Singh. **Pant ke kavya mein aprastut yojana.**

BHU. Dr V B Singh, Department of Hindi, Banaras Hindu University, Varanasi.

2. Balbhadra Singh. **Acharya Ramnchandra Shukla ke rachanatmak nibandh.** BHU. Dr Ashok Singh, Department of Hindi, Banaras Hindu University, Varanasi.

3. Bajaj, Alka. **Kamayani mein mithakiya tatva.** BHU . Dr Narendra Singh, Department of Hindi, Banaras Hindu University, Varanasi.

4. Gautam, Seema. **Nirala kee kavita mein rashtriyata kee bhavana.** BHU. Dr Baliraj Pandey, Department of Hindi, Banaras Hindu University, Varanasi.

5. Giridhar Singh. **San 60 ke bad kee kahaniyon mein madhyavarg.** BHU. Dr Baliraj Pandey, Department of Hindi, Banaras Hindu University, Varanasi.

6. Manjul, Subodh Kumar. **Nirmal Varma kee katha bhasha.** BHU. Dr R M Sharma, Department of Hindi, Banaras Hindu University, Varanasi.

7. Mishra, Abhinay. **Gender in Hindi and Spanish: A contrastive study.** BHU. Dr Kumar Pankaj, Department of Hindi, Banaras Hindu University, Varanasi.

8. Nair, Lekha S. **Malayalam se Hindi mein anoodit sahitya: Samasyayen aur sambhavanayen.** Kerala. Dr P Sanal Kumar, Lecturer, Department of Hindi, Medical College, Thiruvananthapuram.

9. Sharma, Ramesh Kumar. **Guru Granth Sahab aur rashtriya bhavanatmak ekta ka pariprekshya.** BHU. Dr K N Tiwari, Department of Hindi, Banaras Hindu University, Varanasi.

10. Sharma, Sanjaya. **Sur sahitya mein gopiyon kee bhakti bhavana.** BHU. Dr Ibha Gupta, Department of Hindi, Banaras

Hindu University, Varanasi.

11. Singh, Anita. **Hindi sathottari kahani mein jeevan mulya.** BHU. Dr Vimla Singh, Department of Hindi, Banaras Hindu University, Varanasi.

12. Singh, Madhubala. **Jansanchar madhyamon mein anuvad ke roop mein prayukt Hindi bhasha: Saidhhantik vivechan.** BHU. Dr R M Sharma, Department of Hindi, Banaras Hindu University, Varanasi.

13. Singh, Pratibha. **Premchand ke upanyason mein sanskritik chetna.** BHU. Dr Vimla Singh, Department of Hindi, Banaras Hindu University, Varanasi.

14. Singh, Udai Pratap. **Pragatisheel upanyason mein yuva chetna, 1960-90.** BHU. Dr Narendra Singh, Department of Hindi, Banaras Hindu University, Varanasi.

15. Sreedevi, T. **Sathotthar Hindi kahani sahitya: Ek moolyankan.** Kerala. Dr V Nandikesan Nair, Prof, M G College, Thiruvananthapuram.

16. Srivastava, Kuntal. **Chhayavad aur angreji kee romantic kavita ke prakriti chitran ka tulanatmak adhyayan.** BHU. Dr M N Rai, Department of Hindi, Banaras Hindu University, Varanasi.

17. Srivastava, Vandana. **Bhagawaticharan Verma ke upanyason mein katha kala.** BHU. Dr V N Tripathi, Department of Hindi, Banaras Hindu University, Varanasi.

18. Suma, S. **A study of the socio-political consciousness depicted in the novels of Rahi Masoom Raza.** Kerala. Dr N Ravindra Nath, Prof, Department of Hindi, University of Kerala, Kariavattom.

19. Tiwari, Mukesh Kumar. **Nayi kahani mein grameen jeevan.** BHU. Dr Baliraj Pandey, Department of Hindi, Banaras Hindu University, Varanasi.

Urdu

1. Saiyied Sajjad Mahui Husaini. **Bisween sadi mein Urdu qasida nigari.** BHU. Dr Nasim Ahmad, Department of Urdu, Banaras Hindu University, Varanasi.

2. Siddiqi, Mohd. Samiullah. **Urdu nasr mein hali ke karname.** BHU. Dr Q Jahan, Department of Urdu, Banaras Hindu University, Varanasi.

Persian

1. Niknajad, A H. **Revolutionary literature in Persian in 20th century.** BHU. Dr S Akhtar, Department of Perisan, Banaras Hindu University, Varanasi.

Malayalam

1. Lakshmi Kumari, B. **The concept of women's liberation in Malayalam fiction: A study with reference to the stories of Lalithambika, Antherjanam K, Saroswathy Amma and Rajalekshmi.** Kerala. Dr V S Sharma, Prof and Head, Department of Malayalam, University of Kerala, Kariavattom.

2. Sasidhara Kurup, C. **Contribution of Shri Chattampi Swamikal to the cultural renaissance of Kerala.** Kerala. Dr N R Gopinatha Pillai, Reader, Department of Malayalam, University of Kerala, Kariavattom.

3. Soman Nadar, K. **Evolution of the art of story telling in Malayalam short story upto 1950.** Kerala. Dr N R Gopinatha Pillai, Reader, Department of Malayalam, University of Kerala, Kariavattom.

4. Sudhakara Kurup, T A. **Contribution of Seshagiri Prabhu to Malayalam.** Kerala. Dr N R Gopinatha Pillai, Reader, Department of Malayalam, University of Kerala, Kariavattom.

Geography

1. Aduwo, Isaiah Gibson. **The role efficiency and quality of service of the matato mode of public in Nairobi, Kenya.** BHU. Dr M B Singh, Department of Geography, Banaras Hindu University, Varanasi.

2. Akaloo Prasad. **Environmental pollution of Chitpur Industrial Area, North-West Calcutta, West Bengal: A geographical analysis.** BHU. Dr R Bilas, Department of Geography, Banaras Hindu University, Varanasi.

3. Chandra, Amita. **Transformation of rural habital in Partapgarh District U P.** BHU. Dr (Mrs) M Agrawal, Department of Geography, Banaras Hindu University, Varanasi.

4. Chintamani Devi. **A geographical study of health facilities and family planning adoptation in Narainpur Block, Mirzapur District, U P.** BHU. Dr M B Singh, Department of Geography, Banaras Hindu University, Varanasi.

5. Chopra, Narayan. **Multispectral and mutlitemporal remote sensing date in sresource and environmetal analysis: A case study of a part of Sonbhadra District, UP.** BHU. Dr K N P Raju, Department of Geography, Banaras Hindu University, Varanasi.

6. Gupta, Dinesh Prasad. **Barreilly City: Its urban landuse, problems and planning.** . BHU. Dr K K Dube, Department of Geography, Banaras Hindu University, Varanasi.

7. Joshi, Vishwanath. **Impact of social forestry in Rajasthan.** BHU. Prof V R Singh, Department of Geography, Banaras Hindu University, Varanasi.

8. Kushwaha, Kiran. **Development dynamics in Lucknow Urban area.** BHU. Dr (Mrs) T D Singh, Department of Geography, Banaras Hindu University, Varanasi.

9. Laxmi Narayan. **Air pollution and its effects on human health: A geographical study of Varanasi City.** BHU. Dr V K Kumar, Department of Geography, Banaras Hindu University, Varanasi.

10. Mishra, Kavita. **Image of Varanasi City: A geographical study of tourists and pilgrims.** BHU. Dr Rana P B Singh, Department of Geography, Banaras Hindu University, Varanasi.

11. Pandey, Aparan. **Changing landuse in Moghal Sarai and Environe.** BHU. Dr B Dube, Department of Geography, Banaras Hindu University, Varanasi.

12. Pandey, P. **Integrated resource management for substential development: A geographical study.** BHU. Dr S P Mishra, Department of Geography, Banaras Hindu University, Varanasi.

13. Pandey, Vineeta. **Urbanization in Northern Upper Ganga Plain: A geographical study.** BHU. Dr R B Singh, Department of Geography, Banaras Hindu University, Varanasi.

14. Rai, Savitri. **The impact of environmental destruction on flood water of Ganga-Sona Basin.** BHU. Dr (Miss) P Kapoor, Department of Geography, Banaras Hindu University, Varanasi.

15. Sarvesh Singh. **A gegraphical study of Nayar Valley U P.** BHU. Dr M B Singh, Department of Geography, Banaras Hindu University, Varanasi.

16. Singh, Vinita. **Noise pollution: Its impact with reference to Varanasi.** BHU. Prof Onkar Singh, Department of Geography, Banaras Hindu University, Varanasi.

17. Tripathi, Ram Nagina. **Rural development: A geographica study.** BHU. Dr P R Sharma, Department of Geography, Banaras Hindu University, Varanasi.

18. Upadhyaya, Bal Mukud. **Population dyanic and settlement analysis in the Buxer District, Bihar.** BHU. Dr K K Dube, Department of Geography, Banaras Hindu University, Varanasi.

19. Vijay, Sunita. **Population and development of Alwar District.** BHU. Dr D N Singh, Department of Geography, Banaras Hindu University, Varanasi.

History

1. Agarwal, Arpana. **Uttar Bharat ke Guptottar abhilekhon ka lipi shastriya adhyayan.** BHU. Dr (Mrs) M Lal, Department of Ancient Indian History, Culture and Archaeology, Banaras Hindu University, Varanasi.

2. Agrawal, Vandana. **Pramukh brahmin granthon mein varnit bhoutik sanskriti ka adhyayan.** BHU. Prof P C Pant, Department of Ancient Indian History, Culture and Archaeology, Banaras Hindu University, Varanasi.

3. Akhilesh Singh. **Mahayan kee samajik prishth bhumi.** BHU. Dr M S Shukla, Department of Ancient Indian History, Culture and Archaeology, Banaras Hindu University, Varanasi.

4. Deoria, Sunita. **Pracheen Bharatiya gantantrik vyavastha.** HS Gour. Dr B N Sharma, Department of Ancient Indian History, Culture and Archaeology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

5. Pandey, Shobha. **Indonesia mein bhumi vyavastha: 7vin se 12vin shatabdhi tak: Abhilekhon ke adhar per.** BHU. Dr (Mrs) S D Singhal, Department of Ancient Indian History, Culture and Archaeology, Banaras Hindu University, Varanasi.

6. Roy, Nupur. **Madhya Ganga Ghati ke uttakhanit purasthalon se prapta vastuon ka ek adhyayan: Prarmbha se E. Pura pratham shati.** BHU. Dr Birendra Pratap Singh, Department of Ancient Indian History, Culture and Archaeology, Banaras Hindu University, Varanasi and Dr V Jayaswal, Department of Ancient Indian History, Culture and Archaeology, Banaras Hindu University, Varanasi.

7. Sharma, Nisha. **Isa purva kal mein ayurvedic sanhitaon ka kramik vikas.** BHU. Dr P K Agrawal, Department of Ancient Indian History, Culture and Archaeology, Banaras Hindu University, Varanasi and Dr L D Dwivedi, Department of Auryeda, Banaras Hindu University, Varanasi.

8. Singh, Brahma Nand. **Archaeology of Ballia District.** BHU. Prof P Singh, Department of Ancient Indian History, Culture and Archaeology, Banaras Hindu University, Varanasi.

9. Singh, Rajesh Kumar. **Pracheen Bharat evam Afghanistan ka sanskritik sampraka.** BHU. Dr M S Shukla, Department of Ancient Indian History, Culture and Archaeology, Banaras Hindu University, Varanasi.

10. Singh, Satyendra Kumar. **Kambuj mein Shaiv Dharam ka vikas.** BHU. Dr S D Singhal, Department of Ancient Indian History, Culture and Archaeology, Banaras Hindu University, Varanasi.

11. Tiwari, Sangita. **Bundelkhand kshetra ka samajik itihas, 650 isvi se 1200 isvi tak.** HS Gour. Dr S D Mishra

12. Tripathi, Namita. **Pracheen Bharat mein manodaihik chikitsa ke vikas ka kramik adhyayan.** BHU. Prof (Mrs) K K Gopal, Department of Ancient Indian History, Culture and Archaeology, Banaras Hindu University, Varanasi and Prof G P Dubey, Department of Basic Principles, Institute of Medical Sciences, Banaras Hindu University, Varanasi.

13. Verma, Vijay Kumar. **Purano mein lok kalyan kee rajkiya yojanayen.** BHU. Dr (Mrs) S D Singhal, Department of Ancient Indian History, Culture and Archaeology, Banaras Hindu University, Varanasi.

THESES OF THE MONTH

A list of Doctoral Theses accepted by Indian Universities.

SOCIAL SCIENCES

Library & Information Science

1. Singh, Dev Raj. **A comparative study of career advancement of library professionals in university libraries in Panjab, Harayana Madhya Pradesh and Uttar Pradesh.** Delhi.

2. Singh, Naorem Giridhari. **Personnel problems in library management: A study of the university and post graduate centre libraries in the North-Eastern Region of India.** Manipur. Prof M R Kumbhar, Ex-Librarian, Manipur University, Imphal.

Psychology

1. Namdeo, Gajanan. **Experiments on selective attention: Processing of unattended information in dichotic listening.** HS Gour. Dr H S Asthana, 255/79, Kundri Rakabganj, Lucknow.

2. Sahni, Sanjeev P. **A study of drug addiction in Northern India: Its genesis and consequences with special reference to heroin.** Panjab.

Sociology

1. Gurusamy, S. **Peasant politics in Tamilnadu: A socio political analysis of a present group.** Gandhigram. Dr S Sivasubramanian, Prof (Retd), Department of Politics, Gandhigram Rural Institute, Gandhigram.

2. Jain, Yogendra. **Indore Nagar ke asangathit kshetra mein karyarat mahilayon kee sthiti ka samaj shastriya adhyayan: Indore Nagar kee mahilayon per adharit ek samajashastriya adhyayan.** Devi Ahilya. Dr Dinesh Kumar Gupta, Asstt Prof, Govt P G College, Dhar.

3. Kapur, Mala. **Medical roles and medical practice: A case study of a private hospital in Delhi.** Delhi.

4. Mehta, Deepak. **A sociological study of Gandhian Institutions: Work weavers and the Khadi and Village Industries Commission.** Delhi.

5. Savyasaachi. **A study in the sociology of agriculture.** Delhi.

6. Sharma, Satyendra. **Agro-social impact of communication pattern on farming technology among tribal farmers of District Indore.** Devi Ahilya. Dr P N Khare, Prof, Govt College, Khategaon, Distt Dewas.

7. Shrivastava, Awadhesh Kumar. **Balaghat Mandala Pradesh mein grameen adhivason ke kshetriya pratiroop evam unmein parivartan kee pravrittiyan.** Devi Ahilya. Dr M M Abbasi, B-417, Sudama Nagar, Indore.

8. Tiwari, Damyanti. **Indore mein paramparagat Hindu parivarik vyavastha per nagarikaran ka prabhav.** Devi Ahilya. Dr T R Seth, Asstt Prof, Pamaba Gujarati Kala evam Vidhi Mahavidyalaya, Indore.

9. Upadhyaya, Renuka. **Balashram: Ek samajik arthik adhyayan: Indore nagar ke bal shramikon ke adhyayan per adharit.** Devi Ahilya. Dr V C Tongya, Prof, Department of Sociology, Pamaba Gujarati Kala evam Vidhi Mahavidyalaya, Indore.

Social Anthropology

1. Ananda, G. **A study on tribal ashram schools among the Chenchus of Nallamalai Hills in Andhra Pradesh.** Venkateswara. Dr P Sudhakara Reddy, Lecturer, Department of Social Anthropology, Sri Venakateswara University College, Tirupati.

2. Venkata Ramana, Gutala. **An anthropogenetic study of Mane Dora Tribe.** Andhra.

Political Science

1. Dikshit, Bhabani Shankar. **The United Nations and Anti-Apartheid Movement with special reference to the role of the UN Special Committe Against Apartheid.** Delhi.

2. Gupta, Suman. **Emergence of issues concerning women in Indian politics during the pre-independence period.** Delhi.

3. Jain, Rashmi. **Indo-US relations after the Indo-Pak war of 1971.** Delhi.

4. Mishra, Rajalaxmi. **Constitutional and political evolution of Orissa, 1936-1946.** Sambalpur. prof A P Padhi, Department of Political Science, Sambalpur University, Jyoti Vihar, Burla.

5. Mohammad Omar. **A study of disarmament as a basic theme in India's foregin policy, 1947-64.** Rabindra Bharati.

6. Obaidullah Fahad. **Concept of Shura in Islamic State and its contemporary interpretations.** AMU. Dr Ishtiaq Ahmad.

7. Pande, Suhas Keshorao. **Leadership of Dr N B Khare.** Nagpur. Dr K S Kshirsagar, Department of Political Science, Nagpur University, Nagpur.

8. Rajendran Nair, V. **Industrial relations and multi unionism in the K S E B.** Kerala. Dr Jaydeva Das D, Reader, Department of Political Science, Institute of Correspondence Courses, University of Kerala, Kariavattom.

9. Shamsul Alam. **The C P I and its characterization of the Indian State, 1951-61.** Burdwan. Dr Shyamal Kumar Roy, Prof, Department of Political Science, University of Burdwan, Burdwan.

Economics

1. Anjani Kumar. **Innovation dissemination pattern under training and visit extension system and its multi dimensional impact on farmers in South Bihar.** Rajendra Agrl.

2. Gautam, Deep Singh. **Impact of irrigation on crop growth, income distribution and employment generation in Tawa Command Area of Madhya Pradesh.** HS Gour. Dr M L Tripathi, Reader, Department of Economics, Dr Hari Singh Gour Vishwavidyalaya, Sagar,

3. Jesudass, M L. **Wages and working conditions of construction workers in Madurai City: A study.** Madurai.

4. Lovkesh Kumar. **Energy planning on various farm situations in different agro-climatic zones of Panjab.** Panjab.

5. Mathew, P K. **Marketing of coir in India.** Awadhesh. Dr V C Sinha, Department of Business Economics, Awadhesh Pratap Singh University, Rewa.

6. Naik, Bharat Dhirubhi. **Growth and regional income inequality: A case study of India.** S Gujarat. Dr D G Vashi, 49, Ananadnagar Society, Bilimora, District Valsad.

7. Pancholi, Bharatiben Manharlal. **Socio-economic status of women workers: A study of Valsad District.** S Gujarat. Dr A S Charan,Prof and Head,Department of Economics, SouthGujarat University, Surat.

8. Pandove, Amita. **Labour management relations in National Fertilizers Limited.** Punjabi. Dr Govind Khanna, Head, Department of Economics, Punjabi University, Patiala.

9. Panduranga Reddy, Chilukuri. **A study of employment output and instability in the construction industry.** Andhra.

10. Pratap Reddy, K. **Evaluation of IRDP: A microlevel study of milch anmimal scheme in Karimnagar District.** Osmania.

11. Ramachandran, S. **An analysis into the developmental goals and their attainment in regional rural banks in Tamilnadu.** Gandhigram. Dr B S Nagarajan, Dean, Faculty of Rural Social Sciences, Gandhigram Rural Institute, Gandhigram.

12. Saraswathy, N. **The role of State Bank of India financing in rural development in Madurai District.** Madurai.

13. Subramanian, Chellam. **A study of employment, income and levels of living of landless agricultural labourers in Thirumangalam Taluk, Madurai District.** Madurai.

Law

1. Chakraborti, Nirmalkanti. **Probation in the administration of criminal justice in West Bengal: A critical appraisal of the system.** Burdwan. Dr Nripendra Lal Mitra, Former Prof, Department of Law, University of Burdwan, Burdwan.

2. Vibhute, Khushal Irwantrao. **International commerical arbitration: A study of two basic problems.** Poona. Dr S K Agrawala, Secretary, Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi.

Education

1. Akhelesh Singh. **Comparative effectiveness of value discussion of model traditional approach for developing value clarification of college students.** Devi Ahilya. Dr D N Sansanwal, Department of Education, Devi Ahilya Vishwavidyalaya, Indore.

2. Bose, N. **Preparation and testing of instructional strategies for the development of certain higher skills for learning at plus two stage.** Kerala. Dr K R Sivadasan, Prof, Department of Education, University of Kerala, Thiruvananthapuram.

3. Dhaliwal, Sutinder Singh. **Physical fitness of 10-18 year old males living at two selected altitudes.** Punjabi. Prof L S Sidhu, Department of Human Biology, Punjabi University, Patiala and Dr H S Sidhu, Scientific Officer, National Institute of Sports, Patiala.

4. Gulzar Singh. **A comparative study of attitudes towards population education, environmental education and family planning of different levels of workers in specific occupations.** Punjabi. Dr T S Sodhi, Reader, Department of Education, Punjabi University, Patiala.

5. Harjinder Singh. **A critical analysis of policies of physical education and sports in India since independence.** Punjabi. Dr G S Banga.

6. Jagjit Kaur. **A study of the Government run female adult and non-formal education programmes in Panjab.** Punjabi. Dr Amrit Kaur, Prof, Department of Education, Punjabi University, Patiala.

7. Jit Singh. **A study of the problems of physical education and sports in Panjab.** Punjabi. Dr G S Banga.

8. Kamboj, Jasmel Kaur. **Physique and physical abilities of junior female gymnasts in relation to their performance.** Punjabi. Dr Rupinder Mokha, Lecturer, Department of Human Biology, Punjabi University, Patiala.

9. Mathew, Raju M. **Allocation of resources in recently started university libraries of developing countries with special reference to some Indian university libraries.** Kerala. Dr N Vedamani Mnuel, "Micro" Kudyil Complex, Kanjirampara, Thiruvananthapuram.

10. Praharaj, Balakrishna Somanath. **Environmental knowledge, environmental attitude and perception regarding environmental education among pre-service and in-service secondary school teachers.** Baroda.

11. Pugazhenthi, G. **A study of teacher education programme through correspondence system in Madurai Kamaraj University.** Baroda.

12. Rajan, Jankai. **Cognitive development in primary school children with particular reference to the concepts of space and time.** Osmania.

13. Sivapalan, Unnithan, T R. **An enquiry into the workers' education programme in Kerala with a view to suggest improvements.** Kerala. Dr K Sivadasan Pillai, Director, Centre for Adult Education and Extension, University of Kerala, Kariavattom.

14. Usha Rani, P. **A study on developmental milestones in Down's Syndrome and its implication in educational training.** Osmania.

15. Varghese, M Mary. **A study of the health status of primary school pupils and its influence on achievement for framing a school health programme.** Kerala. Dr (Mrs) Vasantha Ramkumar, Prof and Head, Department of Education, University of Kerala, Trivandrum.

Commerce

1. Bramhvansi, Gyan Prakash. **Hoshangabad Sambhag mein bhoomiheen shramikon kee arthik evam samajik sthiti: Ek adhyayan.** HS Gour. Dr A S Chouhan, Jawahar Lal Nehru Mahavidyalaya, Shohagpur, Distt Hoshangabad.

2. Kawar Jit Kaur. **Disclosure practices in public sector companies in India.** Delhi.

3. Kesavaperumal, S. **The empirical significance of indirect finance in India: A flow of funds analysis.** Madurai.

4. Patwa, Rohitan Kekhasharu. **Export financing by Indian banks: An empirical analysis.** Baroda.

5. Sahu, Surat Lal. **Madhya Pradesh ke cement udyog mein sevivargiya prabandh: Ek sarvajanik evam niji ikai ka tulnatmak adhyayan.** HS Gour. Dr V K Sharma, Department of Commerce, Government College, Deori, Sagar.

Home Science

1. Choudhury, Reeta. **Invulnerable children: An exploratory attempt to indentify and study them.** Berhampur. Dr A Srikanta Dash, Reader, Department of Psychology, Utkal University, Vani Vihar, Bhubaneswar and Dr Aparajita Chowdhury, Reader, Department of Home Science, Berhampur University, Berhampur.

Management

1. Amandeep. **Profits and profitability of Indian nationalised banks.** Panjab.

2. Dasgupta, Sibamay. **Biomechanical modelling of manual material lifting operations: A study on Indian workmen.** IISc.

3. Joseph, M. **Materials management in cooperative spinning mills in Tamilnadu: A study of current practices, problems and design of an improved system of material management.** Gandhigram. Dr O R Krishnasamy, Prof (Retd), Faculty of Commerce, Bangalore University, Bangalore.

4. Karthikeyan, G. **Development and application of studies: Some special micromanpower models for engineering production.** IISc.

5. Kotwani, Gurbux L. **Reference group influence on consumer behavior.** Delhi.

6. Parminder. **Education and human resource development in rural Panjab: A study of District Bathinda.** Punjabi. Dr Prem Kumar, Guru Kashi Institute of Advanced Studies, Damdama Sahib, Bathinda.

7. Ramachandran, G. **Behaviour of share prices: A statistical analysis.** Madras.

8. Ratnaja, Gogula. **Food Corporation of India and market performance of foodgrains with special reference to rice and wheat.** Andhra.

9. Sengupta, Kalyan Sankar. **A study on relative merits of urban public transport compositions in less developed countries.** Calcutta.

10. Sivaprakasam, P. **An appraisal of personnel management policies and practices in central cooperative banks in Tamilnadu.** Gandhigram. Dr O R Krishansamy, Prof (Retd), Faculty of Commerce, Bangalore University, Bangalore.

11. Sudhakara Reddy, B. **The energy sector of the Metropolis of Bangalore.** IISc.

12. Venkata Chalapathi Rao, Pokkunuri. **Scope and outcome of collective bargaining: A study of a public enterprise in Visakhapatnam.** Andhra.

EDUCATION NEWS INDEX

A list of select articles and editorials on education from newspapers received in the AIU Library during April 1992.

EDUCATIONAL PHILOSOPHY

Lalit Kishore and Aggarwal, B K. Imparting the right social values. **The Hindu** 7.4.92.

Mudambadithaya, G S. Why value education? **Deccan Herald** 24.4.92.

EDUCATIONAL PSYCHOLOGY

Mangala, C N. Arid land of learning. **Deccan Herald** 24.4.92.

EDUCATIONAL SOCIOLOGY

ENLIGHTENED STAND (Editorial). **The Times of India** 30.4.92.

Fernandez, Mary Dorothy. Products of anti-social environment. **The Hindu** 21.4.92.

PROF. HASAN stands for freedom (Editorial). **The Pioneer** 30.4.92.

RIGHT TO read a book (Editorial). **Indian Express** 27.4.92.

RESERVATION ISSUE again (Editorial). **The Tribune** 13.4.92.

RESISTANCE TO quota reform (Editorial). **The Hindustan Times** 13.4.92.

Saksena, N S. Let merit and aptitude prevail: A representative bureaucracy will prove disastrous for the country. **The Telegraph** 30.4.92.

EDUCATIONAL POLICY & PLANNING

HUMAN DEVELOPMENT report: In search of the future (Editorial). **The Economic Times** 27.4.92.

IN A shambles (Editorial). **The Hindustan Times** 25.4.92.

Mowla , Shaik. Govt's priority should be primary education. **The Hindu** 28.4.92.

WELCOME MOVE (Editorial). **The Hindu** 17.4.92.

EDUCATIONAL ADMINISTRATION

Ajith, R. What countless students experience. **The Hindu** 21.4.92.

Amrik Singh. Amen to autonomy. **Deccan Herald** 3.4.92.

-----------. Revise fees for higher education. **The Times of India** 4.4.92.

Anita Rao, M. Punishment for prattling. **The Hindu** 21.4.92.

Baruah, Prabin. Higher secondary education & junior college. **The Assam Tribune** 1.4.92.

Devadason, E D. Rights of minority institutions. **The Hindu** 7.4.92.

Gupta, Anupam. Education as class privilege. **The Tribune** 27.4.92.

Jain, P L. Dealing in degree. **The Tribune** 26.4.92.

Mahajan, Krishan. Medical college admission malpractice: Weak SC ruling fails to check problem. **Indian Express** 20.4.92.

Nanjundappa, D M. Touchstones for teachers. **Deccan Herald** 3.4.92.

Parthasarathy, R. Techno-transfer from varsity to industry. **The Hindu** 28.4.92.

Prabhat Basant. Going back to the future. **The Pioneer** 14.4.92.

Samant, Aditya and Joshi, Vasudeo. Do business schools discourage entrepreneurship? **The Economic Times** 2.4.92.

Sen, Rehana. Legacy of Charles Wallace. **The Hindustan Times** 4.4.92.

Thampu, Valson. Minority colleges: Key SC verdict. **The Times of India** 1.4.92.

--------------. Minority institutions: Principle of merit and SC verdict. **The Hindustan Times** 24.4.92.

UNNECESSARY ALARM (Editorial). **Deccan Herald** 24.4.92.

EDUCATION & POLITICS

Das, Suranjan. Indian history: Lessons from the Congress. **The Statesman** 1.4.92.

CONTEMPORARY HISTORY (Editorial). **The Times of India** 10.4.92.

CURRICULUM

Ashok Kumar, S R. What they expect from film university? **The Hindu** 17.4.92.

Joe, Harry. Teaching through acting. **The Hindustan Times** 18.4.92.

Kindra, Jaspreet. Educating for AIDS. **The Hindustan Times** 25.4.92.

Kothandaram, Vaidehi. To make history interesting. **The Hindu** 14.4.92.

Mehrotra, Deepti. Bringing theatre into the classroom. **The Pioneer** 14.4.92.

Murali, Nandini. Too much too soon. **The Hindu** 7.4.92.

Pande, D C. Decline of legal education. **The Hindustan Times** 3.4.92.

Pathak, Avijit. Is it the end of the road for humanities. **The Pioneer** 3.4.92.

Srinivasan, Aruna. Nurturing young talents. **The Hindustan Times** 11.4.92.

LANGUAGE & LANGUAGE POLICY

Purushotham, Atluru. Education: Different and more picturesque? **The Hindu** 14.4.92.

Shubira Prasad. English language problem in India. **The Pioneer** 7.4.92.

Thakur, Govardhan. Question of simplification. **The Hindu** 21.4.92.

SCIENCE EDUCATION

Rajagopalan, T. Injecting scientific temper. **The Hindu** 12.4.92.

VOCATIONAL EDUCATION

EDUCATING DOCTORS (Editorial). **The Hindustan Times** 8.4.92.

Patwardan, Rahul. Three pronged formula for success. **The Pioneer** 17.4.92.

Thaman, R K. Management courses. **The Tribune** 19.4.92.

TEACHERS & TEACHING

Chopra, Sarojine. Society and teachers: In conflict or harmony? **The Hindu** 9.4.92.

Dandapani, S. Art of teaching. **The Hindu** 7.4.92.

Jayaraman, Lakshmi. Panacea to tuitions. **The Hindu** 21.4.92.

Nakra, Onita. Teaching the teachers. **The Pioneer** 12.4.92.

EDUCATIONAL TECHNOLOGY

Ninan, Sevanti. ETV: Hit or miss? **The Hindu** 26.4.92.

EDUCATIONAL EVALUATION

Atiq Khan. Big step to prevent cheating in exams. **Deccan Herald** 21.4.92.

Rajagopalan, T. Examinations: Need for reforms. **The Hindu** 23.4.92.

Rajappa, Lakshmi. Caught in a vicious circle. **The Hindu** 14.4.92.

Shiveshwarkar, Shyamala. Crux of the matter. **The Hindustan Times** 5.4.92.

Walters, Laurel Shaper. Tests to perform, not to take. **The Assam Tribune** 26.4.92.

ECONOMICS OF EDUCATION

Kale, V B. High costs of higher studies. **Deccan Chronicle** 19.4.92.

LIBRARIES & BOOKS

Amrik Singh. Of books & publishers. **The Hindustan Times** 19.4.92.

Bagla, Pallava. Paperless books: All in the pocket. **The Economic Times** 18.4.92.

Davidar, David. Reviewing reviewing. **The Hindu** 19.4.92.

Kedar Shankar, S. School books turn over new leaf. **Deccan Herald** 10.4.92.

Krishnamurthy, K. Small is fruitful. **The Hindu** 5.4.92.

Manmadhan, Prema. Blow for quality books. **Indian Express** 16.4.92.

Pinto, Jerry. Warm thoughts on a cool table. **Free Press Journal** 26.4.92.

Sengupta, Ranjana. World through Enid Blyton's eyes. **The Pioneer** 3.4.92.

Venugopal, S. Mystery of NCERT's vanishing textbooks. **The Pioneer** 14.4.92.

Viswanathan, C G. Indian libraries have really made the grade. **The Hindu** 28.4.92.

ADULT EDUCATION

Atma Ram. Teaching the adults. **The Hindu** 28.4.92.

COMPULSORY BLABBING ? (Editorial). **The Tribune** 12.4.92.

Ifthekhar, J S. Teaching Andhraites three R's. **Indian Express** 21.4.92.

ILLITERACY MISSION (Editorial). **The Tribune** 8.4.92.

Mojumdar, Modhumita. Towards total literacy. **The Hindustan Times** 19.4.92.

Raghu, V. Creating suitable environment for neo-literates. **The Hindu** 14.4.92.

Rai, Usha. Operation blackboard-I: Literacy for all still remains a distant dream. **Indian Express** 21.4.92.

Shirali, Rajiv. Mission accomplished? **The Economic Times** 5.4.92.

Singh, H Khogen. Light of hope. **The Hindustan Times** 18.4.92.

Tyagi, Ajay, and Agrawal, Surendra. Kerala's literacy fever in Sirmaur. **The Tribune** 4.4.92.

ELEMENTARY & SECONDARY EDUCATION

Chadha, Lalit Vijay. To hell with public schools. **Patriot** 19.4.92.

INSTITUTIONAL PROFILE

Amrik Singh. Cinderella of Delhi University: Non Collegiate Women's Education Board. **The Hindustan times** 15.4.92.

Chakravarti, Surajit. School for religious thought: Delhi College. **Free Press Journal** 12.4.92.

Mukherjee, Mihir. Research institute in the doldrums: Bose Institute of Calcutta. **The Statesman** 28.4.92.

Randhawa, Gurdeep Singh. Guru Nanak Dev University. **The Times of India** 13.4.92.

Vattam, Krishna and others. Performance belies promise: Institutes of Kannada studies at Bangalore, Mysore, Gulbarga, Karnatak and Kuvempu universities. **Deccan Herald** 17.4.92.

BIOGRAPHICAL PROFILE

Alagh, Y K. Economist with empiricism in his bones: Dr D T Lakdawala. **The Economic Times** 18.4.92.

Brahmananda, P R. Scholar known for his detached objectivity: Dr D T Lakdawala. **The Economic Times** 17.4.92.

Chatterjee, Prabhat. C V Raman: Simply great. **The Statesman** 26.4.92.

Roopinder Singh. Dr Hari Ram Gupta: Punjab's great historian passes away. **The Tribune** 18.4.92.

Sengupta, Amit. Stark absence: Prof Krishna Bharadwaj. **The Pioneer** 3.4.92.

V K GOKAK (Editorial). **Deccan Herald** 29.4.92.

CALENDAR OF EVENTS

Proposed Date of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/ Officer to be Contacted
July 28-30, 1992	Fourth International Conference on Assessing Quality in Higher Education	To promote awareness of current issues and perspectives on the assessment of quality in higher education	University of Twente Enschede, The Netherlands	Mr. Trudy W. Banta Director, Center for Assessment Research and Development, The University of Tennessee, 1819 Andy Hold Avenue, Knoxville, Tennessee 37996-4350
August 11-16, 1992	8th World Congress for Rural Sociology	Theme : Rural Society in the Changing World Order	International Rural Sociology Association, USA	The Pennsylvania State University, 306, Agricultural Administration Building, University Park, Pennsylvania - 16802
August 16-19, 1992	55th Annual Meeting of the Rural Sociological Society	Theme : Rurality and the Global Environment	Rural Sociological Society, USA	-do-
August 25-28, 1992	Second Afro-Asian Psychological Congress	Theme : Psychology for Social Development and Human Welfare	The Chinese Psychological Society	Prof. Wang Su, Congress Secretariat, Department of Psychology, Peking University, Beijing-100871
August 26-28, 1992	Second International ISKO Conference on Cognitive Paradigms in Knowledge Organisation	To provide a forum for scholars working in the field of knowledge organisation	Madras Library Association in collaboration with Sarada Ranganathan Endowment for Library Science and University of Madras	Mr. S. N. Kumar Conference Secretariat, 5, Sivaganga Road, Madras-600 034
September 21-23, 1992	Sixth Annual Conference of the Asian Association of Open Universities	Theme : The Role of Open Universities in promoting Education for All	Korean Society for the Study of Distance Education	Dr. In Sung Jung, Secretariat, AAOU 1992 Annual Conference C/O Korea Air and Correspondence University 169, Dongsung-Dong, Chongro-Ku, Seoul 110-791, Korea
October 26-31, 1992	Third IAU Mid-Term Conference to be held at Alexandria, Egypt	Theme:Adaptation of University Management Structures and Strategies for New Requirement	International Association of Universities (IAU), France	Dr Franz Eberhard, Secretary General, International Association of Universities, 1, rue Miollis, 75732 Paris Cedex 15 France
November 9-13, 1992	16th World Conference on Distance Education for the Twenty-First Century	To give a view of the aspects of development in Distance Education in the Twenty-First Century	International Council for Distance Education, in cooperation with Sukhothai Thammathirat Open University (STOU), Thailand	Mr. Bruce Scriven, Program Chair—16th World Conference of ICDE, Queensland University of Technology, Locked Bag No. 2, Red Hill Queensland 4059, Australia
November 18-20, 1992	VIII Carbohydrate Conference	Exchange of information on recent advances in Carbohydrate research	The Association of Carbohydrate-Chemists and Technologists (India) in collaboration with Regional Research Laboratory, Trivandrum	Dr. Ashok Pandey, Convener or Dr. K.C.M. Raja, Organising Secretary, VIII Carbohydrate Conference, Regional Research Laboratory, Trivandrum-695019
December 14-31, 1992	Short Term Course on Polymeric Materials Product Technology (PMPT-92)	To provide an insight into the specialised behaviour of Polymeric Materials.	Materials Science Centre, IIT, Kharagpur	Dr. Ajit K. Banthia Coordinator, PMPT-92, Materials Science Centre, Indian Institute of Technology Kharagpur - 721302

CLASSIFIED ADVERTISEMENT

ANNA UNIVERSITY : MADRAS 600 025

Advertisement No. 30043/L3/91 **Dated 4.5.1992**

Applications in the prescribed form are invited for the following posts in this University. Application form, details of prescribed qualifications/field of specialisation and other particulars can be had from the Registrar, Anna University, Madras-25, on requisition, accompanied by a crossed Demand Draft for Rs.20/- (Rupees Twenty only) dated not earlier than 8.5.92 drawn in favour of the Registrar, Anna University, Madras-25, together with a self-addressed stamped envelope (Rs.4/-) of size 22 x 10 cm.

DETAILS OF POSTS

Specialisation

I. **CENTRE FOR UNIVERSITY-INDUSTRY COLLABORATION**
(Temporary posts likely to be continued)
1. Co-ordinator (Assistant Professor Cadre) : Mechanical/Electrical/Electronics Engineering
2. Technical Officer (Lecturer Cadre) : Mechanical/Electrical/Electronics/Computer Science/Instrumentation.
3. Technical Officer (Lecturer Cadre) : Chemical/Automobile/Industrial/Production/MBA.

II. **DIVISION OF TRAFFIC AND URBAN SYSTEMS ENGINEERING**
(Regular Posts)
1. Lecturer* : Urban Financial Analysis
2. Lecturer* : Urban Planning
3. Lecturer* : Computer Applications

III. **SCHOOL OF ARCHITECTURE AND PLANNING**
(Regular Post)
1. Lecturer : Architecture

IV. **CENTRE FOR ENVIRONMENTAL STUDIES**
(Regular Post)
1. Professor : Environmental Engineering with specialisation in Application of Systems Analysis, Techniques, Environmental Planning, Solid Waste Management, Policy approaches.
2. Assistant Professor : Environmental Engineering with specialisation in Water Supply treatment and distribution, Project formulation and Appraisal.
3. Lecturer* : 1. Air Pollution Control Engineering
2. Water and Waste Water Treatment, Water Supply and distribution.
3. Environmental Chemistry.
4. Research Fellow/Research Associates : Environment Engineering/Chemistry of Water and Sewage/Microbiology of Water and Sewage.

(Temporary posts likely to be continued)
1. Professor : Environmental Engineering with specialisation in Design of Environmental Engineering Systems, Pollution Control.
2. Assistant Professor : Environmental Pollution Control Engineering with specialisation in treatment and the re-use of Waste Water.

* Those who have passed Lecturership Test (UGC) are alone eligible to apply for regular post.

Scale of Pay:
Professor : Rs.4500-150-5700-200-7300.
Assistant Professor : Rs.3700-125-4950-150-5700.
Lecturer : Rs.2200-75-2800-100-4000.

Research Fellow/Research Associate : Rs.1,600-(on consolidated pay with increment of Rs.100/- per annum subject to Maximum of Rs.2,000/-).

In addition to pay, D.A., H.R.A. and C.C.A. are admissible at the rates in force from time to time.

Request for application forms, details of qualifications, field of specialisation prescribed and other particulars will be entertained upto 29.5.92.

Last date for receipt of completed application is **5.6.92.**

REGISTRAR

GULBARGA UNIVERSITY

GULBARGA

(Administrative Branch)

No.GUG/ADM-I/92-93/551

Dated 7th May, 1992

NOTIFICATION

In continuation of this Office Notification Numbers: i) GUG/ADM- I/91-92/6262, ii) GUG/ADM-I/91-92/6263, dated 30.3.1992, iii) GUG/ADM-I/91-92/6275, dated 31.3.1992 and Corrigendum No.GUG/ADM/92-93/333, dated 24th April, 1992 and No.GUG/ADM- I/92-93/434, dated 29.4.1992, **the last date** for receipt of application for various vacant Teaching and Non-teaching posts is further **extended upto 25.5.1992.**

REGISTRAR

ST. THOMAS COLLEGE

PALA 686574

WANTED

Applications are invited for Lecturers in English, Hindi, Physical Education in St. Thomas College, Pala, to reach the undersigned within thirty days from the date of publication of this notification. Age and qualifications as prescribed by the Govt./University.

Application from can be had from the college office on payment of Rs. 40/- in cash or Rs. 47/- by M.O.

PRINCIPAL

PONDICHERRY ENGINEERING COLLEGE

(Sponsored by the Government of Pondicherry)

Pillaichavady Pondicherry - 605104

No.PEC/AI/Recruit/92/ **Date: 8.5.92**

NOTIFICATION

This institution was started in 1985. The students are drawn from all parts of India and admitted on merit basis. Most modern equipment are provided in the laboratories and workshops spread over the area of nearly 200 acres of land along the coastal line of Pondicherry. Staff Quarters and all other campus facilities are provided to all the members of the teaching staff. AICTE Scales with Central D.A. together with the retiring benefits applicable to the Central Government employees are implemented. Along with the UG and PG programmes excellent opportunity exists for R&D and Consultancy work.

1. **PROFESSORS** : 5 posts

Civil Engineering: 2 (1 Purely temporary - till 30th June '93; 1 Reserved for SC)

Mechanical Engineering : 1 (Reserved for SC)

Electronics and Communication Engineering: 1 (Reserved for SC)

Computer Science and Engineering : 1 (Reserved for SC)

1.1 **Scale of Pay** : Rs.4500-150-5700-200-7300 (The total emoluments in the minimum of the scale will be Rs.7,485/- per month as per the prevailing rates)

1.2 **Age** : Preferably below 50 years, (except for temporary post in Civil Engineering)

1.3 **Qualification & Experience** : (i) Ph.D. with first class Degree at Bachelor's or Master's level in appropriate branch of Engineering/Technology. (ii) 10 years' experience in teaching/industry/research out of which atleast 5 years must be at the level of Assistant Professor or equivalent.

Note: Candidates from Industry/Profession with recognised Professional work of high standard recognised at National/International level equivalent to Doctorate would also be eligible.

1.4 Departments and Fields of Specialisation:
(i) **For Civil Engineering:** Structural Engineering/Environmental Engineering/Hydraulics and Water Resources Engineering/Geotechnical Engineering/Highway Engineering/Transportation Engineering.

(ii) **For Mechanical Engineering:** Machine Design/Thermal Engineering/Production Engineering.

(iii) **For Electronics and Communication Engineering:** Digital Communication/Computer Communication/Optical Communication/Microwave Communication/Image Processing/Antenna Engineering.

(iv) **For Computer Science & Technology:** Microprocessor System/Computer-Architecture/Parallel Processing/Graphics/Simulation/Software Engineering/Data Base Management/Image Processing/Signal Processing/Artificial Intelligence.

2. **ASSISTANT PROFESSORS** : 7 posts

Mechanical Engineering : 1 (Reserved for SC)

Electronics and Communication Engineering : 2 (One reserved for SC)

Computer Science and Engineering : 2 (One reserved for SC)

Mathematics : 1 (One reserved for SC)

Chemistry : 1 (One reserved for SC)

2.1 **Scale of Pay** : Rs.3700-125-4950-150-5700 (Total emoluments at the minimum of the scale will be Rs.6,585/- per month as per the prevailing rates)

2.2 **Age** : Preferably below 45 years

2.3 **Qualifications & Experience** : (i) First class Master's Degree in appropriate branch of Engineering/Technology OR Ph.D. in appropriate branch with Ist class in Master's Degree in case of teaching posts in Humanities and Sciences. (ii) 5 years' experience in teaching/industry/research at the appropriate level.

Note: Candidates from Industry/Profession with recognised professional work equivalent to Master's Degree in the case of Engineering/Technology and Ph.D. in case of Humanities and Sciences as the case may be would also be eligible.

2.4 **Desirable** : Ph.D. Degree in Engineering/Technology or post-doctoral work in case of teaching posts in Humanities/Sciences.

2.5 Department and Fields of Specialisation:

(i) **For Mechanical Engineering** : Thermal Engineering.

(ii) **For Electronics and Communication Engineering** : Communication Systems/An-

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INDIAN INSTITUTE OF ADVANCED STUDY
Rashtrapati Nivas, Shimla 171005

Advertisement No.1/92

Applications are invited for the following posts

SECRETARY (ADMINISTRATION & FINANCE) - One

Qualifications and Experience: The candidate should possess(i) a first or high second class Bachelor's degree of a recognized university; (ii) should have held the post of Director (Administration & Finance) or an equivalent post in a Government department/autonomous organization/educational institution or Registrar in a university for a period of five years and (iii) should have adequate knowledge and working experience of establishment and financial rules.

Pay Scale: Rs.5900-200-6700 with allowances at the rates applicable to Central Government officers of the corresponding grade stationed at Shimla. However, persons in the grade of Deputy Secretary in the Central Government or Deputy Registrar in the Central Universities can also be considered for deputation with usual allowances.

SECRETARY (ACADEMIC) - One

Qualifications and Experience : The candidate should be an eminent scholar with published work of high quality; actively engaged in research; 10 years' experience of teaching and or/research; experience of guiding research at doctoral level.

Pay Scale: that of Associate Professor/Reader in Central Universities.

TENURE: Selected candidates will be placed on probation for two years in the first instance. Persons in Government/Semi-Government employment can be appointed on deputation.

The selected candidates will be provided accommodation in the campus of the Institute on payment of prescribed rent for building and furnishings.

Applications should reach the Director of the Institute on or before June 20, 1992, containing full particulars of the candidates duly supported by attested testimonials, including the present position, the pay-scale and the salary drawn, and positions held during the past 10 years with their pay-scales.

Note : Those who applied earlier for these posts need not apply again.

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tennas and Propagation/Mircrowave Electronics.

(iii) For Computer Science and Engineering: As in 4

Candidates holding Master's Degree in Electrical/Electronics/Communication Engineering with specialisation as in 1.4 (iv) may also apply.

(iv) For Mathematics : Continum Mechanics/Probability and Statistics/Special Functions/Fluid Mechanics/Operations Research/Numerical Analysis.

(v) For Chemistry : Physical Chemistry (Catalysis - Electrochemistry - Thermodynamics)/Analytical Chemistry/ Environmental Chemistry/Materials Science.

3. LECTURERS : 5 posts

Mechanical Engineering : 1 (Reserved for ST)

Computer Science & Engineering : 3 (1 Reserved for ST)

Physics : 1 (Reserved for SC)

3.1 Scale of Pay : Rs.2200-75-2800-100-4000 (The total emoluments at the minimum starting pay of Rs.2,350/- for the M.E. Degree holders will be Rs.4,239/- per month. Ph.D. holders are eligible for 4 increments over the minimum of the scale), in respect of Ph.D. holders in Science and Humanities 3 advance increments will be given and their pay will be fixed at Rs.2,425/- and total emoluments will be Rs.4,367/- as per the prevailing rates.

3.2 Age : Preferably below 35 years.

3.3 Qualification : First class Master's Degree in the appropriate branch of Engineering/Technology OR First Class Master's Degree with Ph.D. in appropriate branch of study in case of teaching posts in Humanities and Sciences.

3.4 Departments and Fields of Specialisation:

(i) For Mechanical Engineering: Machine Design/Management/Industrial Engineering/Thermal Engineering;

(ii) For Computer Science and Engineering: As in 2.5 (iii).

(iii) For Physics: Solid State Physics/Materials Science/Crystal Growth/ Fibre Optics.

4. PROGRAMMER - 2 posts (1 reserved for SC and 1 for ST)

4.1 Scale of Pay : Rs.2200-75-2800-100-4000 (Total emoluments at the minimum of the scale will be Rs.3,982/- as per the prevailing rates)

4.2 Age : Preferably below 30 years

4.3 Qualifications & Experience :

(i) First Class B.E./B.Tech. degree in Computer Science and Engineering or a First Class M.C.A. degree or a First Class M.Sc. (Computer Science) degree or First Class M.Sc. (Mathematics or Statistics) degree with a First Class PG Diploma in Computer Applications.

(ii) In case of B.E./ B.Tech. and M.C.A. degree holders minimum of one year experience in maintenance/program development in a computer centre of an Engineering College or an equivalent organisation on different operating systems. In the case of M.Sc. (Computer Science) degree holders a minimum of two years of experience as above is required. In the other case a minimum of 8 years of experience as above is required.

5. OTHER GENERAL CONDITIONS:

The qualification and experience prescribed above are the minimum and the mere possession of the same may not entitle and candidate to be called for interview.

The prescribed application form will be supplied on requisition accompanied by a crossed Demand Draft for Rs.50/- (Rupees Fifty only) and in the case of Scheduled Caste and Scheduled Tribe candidates Rs.13/- (Rupees Thirteen only) drawn in favour of the PRINCIPAL, PONDICHERRY ENGINEERING COLLEGE, PONDICHERRY, together with a self-addressed stamped envelope of Rs.5/- of 23 x 10 cm. size on or before 15-6-92. Completed applications should reach the Principal, Pondicherry Engineering College, Pillaichavady, Pondicherry - 605 104 on or before 15-6-92.

Applicants who are employees of Government or Quasi-Government Organisation/Government Undertakings should necessarily route their applications through proper channel.

NOTE: Indian Nationals working abroad may apply for the posts on plain paper giving details of qualification, experience etc., with the prescribed fee.

Dr. P. Purushothama Raj

PRINCIPAL

All India Institute of Speech and Hearing : Mysore-570 006

ADMISSION NOTICE

Applications in the prescribed form are invited for admission to courses in Speech and Hearing. Forms with details can be obtained on payment of Rs. 12/- (Rs. 7/- for SC/ST) in cash or MO/IPO drawn in favour of the Director, AIISH, Mysore along with a self-addressed and stamped (Rs.2/-) envelope (23x10 cms).

	B.Sc.	**M.Sc.**
Minimum qualification	PUC or equivalent with PCM/PCB/PCMB as optionals with atleast 50% marks in optionals (45% for SC/ST).	B.Sc. (Speech and Hearing) or equivalent.
Reserved : SC	4	3
ST	2	1
Foreign	3	-
Inservice	-	3

Completed applications received upto 4 pm. 18th June, 1992.

RL 28492

DIRECTOR

VISVA-BHARATI

Admission Notice for
Academic Session 1992-93

VIDYA-BHAVANA (INSTITUTE OF HUMANITIES & SOCIAL SCIENCES)

1. Two-year M.A. courses in Bengali, English, Sanskrit, Hindi, Oriya, Indo-Tibetan, Chinese, Philosophy, Comparative Religion, Economics, History, Ancient Indian History Culture & Archaeology, Geography and Mathematics.

2. Three-year B.A. (Honours) courses in Bengali, English, Sanskrit, Hindi, Oriya, Philosophy, Comparative Religion, Economics, History, Ancient Indian History Culture & Archaeology, Geography and Mathematics.

3. Four-year B.A. (Honours) course in Chinese.

SIKSHA-BHAVANA (INSTITUTE OF SCIENCE)

1. Two-year M.Sc. courses in Physics, Chemistry, Mathematics, Zoology and Botany.

2. Three-year B.Sc. (Honours) course in Physics, Chemistry, Mathematics, Zoology (Life Science) and Botany (Life Science).

KALA-BHAVANA (INSTITUTE OF FINE ART & CRAFT)

1. Two-year M.Fine courses in Painting, Sculpture, Graphic Art (Print Making) and History of Art.

2. Two-year Post-Diploma courses in Painting, Sculpture and Graphic Art (Print Making).

3. Five-year B.Fine (Honours) courses in Painting, Sculpture, Graphic Art (Print Making) Design and History of Art.

4. Five-year Diploma courses in Painting, Sculpture, Graphic Art and Design

5. Two-year Certificate Course in Design.

SANGIT-BHAVANA (INSTITUTE OF MUSIC AND DANCE)

1. Two-year M.Mus. courses in Rabindra-Sangit, Hindusthani classical Music (Vocal/Instrumental - Sitar and Esraj), Katha- Kali and Manipuri Dances.

2. Four-year B.Mus. courses with any two of the following subjects (specialisation in anyone subject only at the Part III level):- Rabindra-Sangit, Hindusthani Classical Vocal Music, Sitar, Esraj, Tabla, Pakhwaj, Kathakali Dance,Manipuri Dance and Drama (upto Part II level) only.

3. Two-year Special Degree courses in subjects at Serial No.2 above.

4. Four-year Diploma course with any two of the subjects at Serial No.2 above (excepting Drama).

5. Four-year Senior Certificate Courses in subjects at Serial No.2 above (excepting Drama).

PALLI SIKSHA-BHAVANA (INSTITUTE OF AGRICULTURE)

1. Two-year M.Sc. (Ag.) courses in Agronomy, Plant Protection and Agricultural Extension.

2. Four-year B.Sc.(Ag.) (Honours) course in Agriculture.

PALLI SAMGATHANA VIBHAGA (INSTITUTE OF RURAL RECONSTRUCTION)

1. Two-year M.A. Course in Anthropology

2. Two-year M.A. Course in Rural Development

3. Two-year M.S.W. course in Social Work

4. Three-year B.S.W. (Honours) course in Social Work

5. Three-year Diploma courses in Crafts in the subjects -

(i) Diploma in Wood work
(ii) Diploma in Handloom Weaving

UTTAR SIKSHA-SADANA (HIGHER SECONDARY SECTION)

Two-year pre-Degree (10+2) course

Subjects offered:

A. Core: (i) English, (ii) Bengali or Hindi or Oriya.

B. Elective: (Three to be selected as Elective and one as Additional out of the following subjects.)

(a). (i) English or Bengali or Hindi or Chinese or Japanese or Sanskrit or Russian. (ii) Paintings or Rabindra-Sangit or Manipuri Dance or Hindusthani Classical Vocal Music or Classical Instrumental Music (Sitar). (iii) Geography or Political Science. (iv) Mathematics or History or Psychology. (v) Philosophy or Ancient Indian & World History or Economics.

(b) Physics, Chemistry, Mathematics and Life Science.

C. Vocational subject (one to be chosen out of a list to be notified by the Principal. Selection of elective subjects and the vocational subject will be at the discretion of the Principal).

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1) All courses at Kala and Sangit-Bhavanas : **June 15, 1992**

2) M.A./M.Sc./M.Sc.(Ag.)/M.S.W., M.A. (Anthrop.)/M.A. (R.D) : **June 30, 1992.**

3. B.A.(Hons.)/B.Sc.(Hons)/B.Sc.(Ag.) Hons./B.S.W. (Hons.)/Diploma in Crafts: **July 21, 1992 for all candidates excepting those who appeared at the Pre-degree Examination of Visva-Bharati or Higher Secondary (+2) Examination of 1992 of the West Bengall Council of Higher Education for whom the date shall be the 21st day from the date of publication of the relevant results.**

4. Pre-Degree course : **July 2, 1992 or 21st day from the date of publication of Madhyamik or equivalent.**

N.B.:- Visva-Bharati remains closed on Tuesday afternoon and Wednesday (weekly holiday).

REGISTRAR

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UNIVERSITY NEWS, MONDAY, MAY 18, 1992 Regd. No. R.N. 7180/63 Postal Regd. No. DL – 11106/92

MBA ADMISSIONS 1992-94

C. RAJAGOPALACHARI INSTITUTE OF MANAGEMENT, BARKATULLAH UNIVERSITY, BHOPAL-462 026

Applications are invited for 2 years full-time and 3 years part-time programme.

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Last Date: Application form duly completed along with examination fee of Rs.150/- should reach the Institute on or before **5th June, 1992.**

M.P. Madhyam/1404/92 **REGISTRAR**

INDIRA KALA SANGIT VISHWAVIDYALAYA

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M. K. GANGAJALIWALE
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C. F. T. R. I., MYSORE

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University News

MONDAY, MAY 25, 1992

Rs. 5.00

Pondicherry Varsity Convocation

From R to L : Prof. S.K. Khanna, Vice-Chairman, UGC, who delivered the convocation address, Prof. A. Gnanam, Vice-Chancellor, Pondicherry University, Dr. Har Swarup Singh, Lt. Governor of Pondicherry and Chancellor, Shri A. Gandhiraj, Education Minister and Shri B.V. Selvaraj, Registrar of the university

DR. YASHWANT SINGH PARMAR UNIVERSITY OF HORTICULTURE AND FORESTRY,

NAUNI (SOLAN) HP

"ACADEMIC BRANCH"

ADMISSION NOTICE

Applications are invited in triplicate for admission to the following programmes for Academic Session 1992-93 starting from 17-8-1992.

I. B.Sc. (Hort.) 4 and 5-year and B.Sc. (Fty.) 4-year Programmes (Entrance Examination)

Admission shall be through a combined entrance examination to be held on 28-6-1992 at 9.00 A.M. at St. Luke's High School, Solan-173230 (H.P)

a) Eligibility for B.Sc. (Hort.) and B.Sc.(Fty.) 4-year Programmes

10+2/equivalent examination with English, Physics, Chemistry, and Biology/Mathematics/Agriculture of a recognised Board/University with a minimum of 50% aggregate marks in the above subjects.

b) Eligibility for B.Sc. (Hort.) 5-year Programme

10+2 with English and Vocational courses in Horticulture/Food Preservation and Processing from H.P. Board of School Education with a minimum of 50% aggregate marks in the above subjects.

Other Information

Last date for receipt of application form for B.Sc. Programmes is **11-6-1992** with examination fee of Rs. 50/- and **19-6-92** with Rs. 100/- (Rs. 50/- + Rs. 50/- as late fee). The fee is non- refundable even if the candidate is not found eligible to appear in the entrance examination.

II. Master Programmes

The last date for the receipt of admission form in triplicate for M.Sc. in respect of following disciplines is **3-8-1992.**

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1. Fruit Culture & Orchard Management
2. Postharvest Technology
3. Vegetable Crops
4. Fruit Breeding & Genetic Resources
5. Entomology & Agriculture
6. Mycology & Plant Pathology
7. Biotechnology

Interview on 14.8.92 from 10..00 A.M. to 1.00 P.M. in the University Campus

b) Forestry (WRITTEN TEST ON 13-8-1992 in the University Campus)

1. Forest Biology & Tree Improvement
2. **Silviculture & Agroforestry**
    - i) Silviculture
    - ii) Agroforestry (For inservice candidates only)
3. Forest Products & Utilization
4. Soil Science & Water Management
5. Agriculture Economics
6. Agriculture Statistics

Interview on 14.8.92 from 2.00 P.M. to 5.00 P.M. in the University Campus

Eligibility

B.Sc. (Hort/Fty./Agr./Animal Husbandry/B.Sc. with an OGPA 6.00/10.00 (2.70/4.00) or its equivalent under course credit system or first division under annual system from a recognised University.

The interview shall be subject to clearance of written test as laid down in the prospectus.

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- i) The minimum qualifying marks is relaxable by 5% in the case of SC/ST and in-service nominees.
- ii) 22 $^1/_2$% of the total seats shall be reserved for candidates belonging to SC (15%) and ST (7 $^1/_2$%).
- iii) The candidates who have appeared in the qualifying examination for different programmes can also sit in the entrance examination/written test. However, their admission shall be subject to their eligibility.
- iv) Prospectus-cum-admission form which is available for sale after **10.5.1992** can be had from the Registrar on payment of Rs. 15.00 at the counter and Rs. 25.00 by post through Crossed IPO in the name of Comptroller of this University. NO MONEY ORDERS/CHEQUES ARE ACCEPTABLE.
- v) No separate letter for ENTRANCE EXAMINATION/WRITTEN TEST AND INTERVIEW will be issued.
- vi) Candidates should attend entrance examination/written test and interview at their own expense on the prescribed date and time and bring original certificates with them.

Bharat Bhushan
REGISTRAR

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Editor :
SUTINDER SINGH

Imperatives of Distance Education

K.K. Bajaj*

The extent and implications of global socio-economic changes would soon call for educational restructuring. The role of colleges and the universities mainly contributing to turning out such products as are no longer employable, will have to be reviewed so as to yield place to more appropriate institutions where the overflow of casual or part time or even nonserious students could be accommodated to study at their own time, pace and convenience. Campuses could no longer be used as decorative and hallowed institutions without social utility, accountability and audit. Whereas a university has to be a place of light, of liberty and of learning yet it has to respond to the current challenges and prove its efficacy as an agent of social change. Proper management of human resources alone assures development. The archaic system of affiliated colleges and opening of prototype universities could hardly discharge this function. It is quite fashionable and politically opportune to demand facilities of formal education to such places as even do not have sufficient number of feeder schools, or population. This is even done in the name of political expediency and for removal of regional disparities and inequalities or under social compulsions. What is really required is the strengthening of the existing institutions which continue to stammer for viability and survival on account of the present resource crunch. There may also be a few centres of excellence which require to be supported and given special assistance as against the numerous projects and research replication schemes which get the patronising approval of the powers that be. Democracy is a very demanding political system but that does not prevent the educational planners to explore and advocate alternatives that could be equally effective and remedial in nature while remaining cost-effective and socially relevant besides being innovative for the students. After all the role of education is to make the society so vibrant as to be committed to change and development. It has to enrich man's life. It has to enhance his capacity to lead better life in the context of the three well anticipated explosions such as of population, knowledge and expectations. While the gaps between the developed and the developing countries and their life styles are increasing, education has to come out with alternatives so that the gaps could be reduced and all could be addressed irrespective of their age, region, background and other socio-cultural barriers. A close scrutiny of the present inputs in our colleges and universities will show that while the faculty is engaged in teaching and claims to an extent to have taught the students, it is the students who educate themselves. If that be the hard truth then the alternative of 'Distance Education' is a better option to be advocated and propagated in the present age. The crisis in collegiate system and the management of our universities with blemishes and scandals surfacing with sickening regularity, making one unsure of the possibility of their improvement, the role of the UGC notwithstanding, the concept of Distance Education offers better promise and avenues of leaning. This may not be a replacement of the present system but it has to be viewed as a parallel to the otherwise well-established system of formal higher education. This indeed may be an attempt to strengthen the system of higher education in the country.

**Dean of Colleges-cum-Director, College Development Council, H.P. University, Shimla-171005*

In spite of the phenomenal expansion of the school education and an impressive increase in the number of colleges and the universities, we continue to suffer from inadequacy of resources and infrastructure to accommodate all who want to seek admission to post-matriculation courses. Democratisation of educational opportunities is a political requirement linked to the survival of democracy. In May 1990 the Government of India has expressed its desire to make education more humane and as a means for bringing about transformation with a status of equality for all. It aimed at excluding all elitist aberrations from it and it also took cognizance of the casteism, communalism and obscurantism as factors that had invaded our campuses. That makes it clear that the formal mode of education required some basic structural changes. Our National Policy on Education – Programme of Action (1986) states that "Distance Education augments opportunities for higher education, ensures access, is cost effective and promotes a flexible and innovative system of education". This marks a growing realisation of the importance of Distance Education. Distance Education has been defined by numerous scholars and educationists in different ways but no definition is conclusive and comprehensive. So it is more practical to discuss its salient imperatives including its scope, modalities, communication strategies and effectiveness. Historically the concept is old but the implications and innovations now attached to it to extend its reach, are new and modern. While it is free from bonds of time, space and face-to-face teaching that go with formal education, the modern sophisticated means of communication and other techniques add to its modernity. While it does not conceive of a particular campus where the students have to go yet it requires the hi-tech laboratories and studios that go into the making of course material that is to be useful to the students. While the conventional system envisages preparation of the lecture on the part of the teacher and its face-to-face delivery in a classroom, the distance education mode calls for well prepared lessons whose delivery system is scientific and without the encumberances of formal classrooms. The students have to have these lessons at their own place, pace and time. While in the conventional mode the set of courses is fixed, under the distance mode the choice is more flexible and favourable to the student. While in the formal system teacher-student ties are the basic link in the teaching process, under the distance mode it is the distance that characterises the system and the effort through all kinds of scientific interventions now is to bridge this and ensure a talk back system which could promote a two way healthy interaction between the counsellor teacher and the student. While the environment of the campus affects the student all through his stay in a college or a university, under the distance mode, the student is free to hold his lessons in an environment that is his own. This is an individual study as against the collective or group lecture method that is now losing its efficacy at the hands of old teachers who rarely revise and update their lessons. Distance mode is more open to scrutiny as far as the quality of its courses is concerned as against lessons in the classes that get delivered to the reluctant students under the conventional system.

New Shift

Distance mode transcends the barriers of classrooms and extends its reach beyond all geographical regions and social inequalities. So this is a radical new shift in education vis-a-vis its reach, contents, scope and efficacy. Discussion on its imperatives will help us go into its taxonomy and anatomy. Its financial management and its dependence on modern tools and technologies will help us understand it in its true perspective. Its complementary nature to supplement the present system of higher education and how far it is able to reach its goals will enable us to see its future perspective.

As an experiment to expand the possibilities of learning with a special concern for the individual, Distance Education holds a unique promise. Those who have a long memory may recall that this is not a new system. It is in its reach and scope now that it is looking to be new. It is a part of the worldwide education boom. It is a vibrant new sector despite the fact that the government does not have a pronounced policy towards it so far despite the fact that it is an increasingly acceptable alternative to lavish provisions and amenities for campus study. In the long range it will prove its relative advantages as against the campus compulsions that keep the quality and tone of our courses down. It may not have the high priority in the national agenda yet with the crowded colleges and universities disillusioning the admission seekers, its fold alone will be the alternative in the years to come. With the backup of the technology that it so richly deserves it will come out to be the only viable mode for higher studies. The word of mouth will ultimately get displaced by the more sustainable and scrutable work of print and media. Greater coordination and cooperation between the programme directors and the course writers will establish the supremacy of the distance mode.

Our view of higher education caravan with massive superstructure of over 190 universities, 7,000 colleges, enrolment of over 40-lac students and an annual expenditure of over thousand crores has to be correlated to displacement pressures it is facing under demographic changes, socio-economic compulsions and more

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C. F. T. R. I., MYSORE

pronounced democratic aspirations of quality and equity of our people. Distance education, against this background, is a calculated mid-course correction despite the ambivalence in the minds of lay educationists and thinkers who permeate the social opinion with the sceptic observations that the courses offered by this mode are inferior to those being offered by our conventional universities and colleges. At the same time it is being increasingly accepted that education is a major cause of the vast ideological and technological changes that are being witnessed worldwide. Education is an agent which has to contribute to the enhancement of the level of human ambition. This is possible only through such alternatives and strategies as can be identified to be of use in extending access of education to wider sections of the adult uneducated and to enable them to compensate for opportunities lost in the past in the course of social and economic hard times. Though distance education is a little studied area, its importance is now being gradually recognised to improve the professional competence of the people. It is taking shape as a coherent, distinct, parallel and viable endeavour with its network of five open universities, 37 other universities and five deemed universities which have been offering the benefits of this mode to over 4.6-lac students in the country which incidentally is about 11% of our total students population in higher education. Besides being an attempt at personal improvement of the learner and an attempt to facilitate inservice training it is a suitable answer to changing social aspirations because it responds to the requirements of flexibility, innovation and relevance to social needs.

Known under different names such as Open Learning, External System, Distance Education, Correspondence Education 'Extra-mural; 'off campus' tele-enseignement', 'education a distance' offered through institutions such as Open University, University of the Air, Tele University, Radio and TV University, Everyman's University etc, the main approach of the system is through distance coverage and through communication means other than the formal and face-to-face. Prof. Borje Holmberg's definition suggests that 'distance education means the various forms of study at all levels which are not under the continuous immediate supervision of tutors present with their students in lecture rooms or on the same premises, but which, nevertheless benefit from the planning, guidance and tuition of a tutorial organisation'. Similar is the definition offered by Keegan which also identifies that in Distance Education all essential tasks take place between the teacher and the learner at a distance through means of two way communication offered by media and at individual basis. It is a system which is organized outside the formal system and which does not emphasise fixed hours of learning and which *inter-alia* cuts across all such requirements of education as go with formal learning systems. The emphasis is on freedom and individual own time study, freedom from bounds of time, space and prescription usually imposed by conventional system. The face-to-face mode of teaching-learning gets minimum importance though the independent learner's self directed pursuit of academic competence does get the benefit of subject experts through print and means of modern technology. In its historical perspective the concept is quite old. The pioneering efforts in this direction were recorded in England and America through postal tuition, correspondence instructions, supplemented by occasional face-to-face teaching-learning. "In the western wold, of appoximately 80 years (1850-1930) correspondence study was only formal education that enabled learners from a variety of social backgrounds and locations to overcome the formidable barriers of space, time, social status etc., in pursuit of learning. By 1930 telecommunications linked to education began to increase the options available to learners and by 1970s correspondence study was one of a number of schemes for learning apart from conventional schooling". The word 'Open' to this kind of study was used in 1969 when United Kingdom Open University was given the charter by Queen Elizabeth II in 1969. Sometimes the two terms 'Open learning' and 'Distance Education' are used interchangeably with open learning covering a wide range of innovations and reforms in education sector. But there is no doubt in it that by whatever name it may be called the system is designed to offer opportunities for part time studies, for learning at distance and for innovations in the curriculum. However, broadly the term 'Open' refers to four aspects (i) people, who would not be debarred on account of their lack of education, (ii) place, in the sense that the learning would be home-based and not restricted to confines of a classroom or a campus, (iii) the use of new methods of teaching, with flexible courses and combinations to choose from, and (iv) the innovative ideas of own time academic pursuits. Distance education had its definition givers, as referred to above, who emphasised (i) distance as an important factor which separates the teacher and the learner, (ii) students services through study centres to sustain such programmes, and (iii) intensive use of media. But whatever be the characteristics to denote the nuances between 'Open Learning' and 'Distance Education' or correspondence courses, they simply emphasise the means to address people and places unreached so far by our formal system of higher education and particularly those who have missed opportunities on account of socio-economic handicaps and those who still while in service or otherwise want to enhance their capabilities so as to improve their level of ambition and competence in life and remain vibrant in national stream.

International Success Story

For our country where access to colleges and universities is still linked to socio-economic considerations and where we face resource contrainsts in the context of our demographic compulsions and where women and students belonging to scheduled castes and scheduled tribes and others living in remote rural areas do not have access to higher education, the accent on distance education becomes more pronounced. Despite the fact that there has been a 10-fold increase in the number of universities since independence and our students population has grown from 1.74 lakhs in 1950-61 to over 40 lakhs now, we still continue to be suffering from lack of resources, management and academic leadership to cope with the requirements of our youth. It is also stated that our universities and other institutions are still elitist and do not respond to our common social requirements. In terms of resource allocation and expenditure per student, the system of formal education still calls for improvement of average quality of education. Besides, this is the only way to combat conservatism in our formal system of higher education where even the undeserving choke the universities and colleges with their clammer for degrees to flood the job market. All over the world despite the emergence of mutual global inter-dependence it has been realised that 85% of world population still lives in poor countries and that with all the political statements of world leaders for an international world order it is a fact that 95% of research capacity is with a few developed countries only and that the research is controlled by a few multinational and transnational companies. In this scenario role of education for the achievement of national objectives such as of equalisation of opportunities, democratisation of aspirations and employment, becomes more crucial today than ever before. Though this is not a readymade prescription for achievement of all these goals, it is an alternative with an international success story as an example and a mode of teaching which teaches how to learn and a mode which effectively supplements the formal system in opening new areas of learning opportunities in all localities. It is in this context that our New Policy on Education also states that the open university system augments opportunities for higher education. Referring to the global experience of its genesis and history starting from 1844 when the Issac Pitman sent his instructions in shorthand by postcard to the present establishment of Commonwealth of Learning and the opening of our Indira Gandhi National Open University there are over 22 lakh students now studying in over 776 distance learning institutions worldwide as per a report compiled by United Kingdom Open University. While the world continues to undergo radical socio-economic and political changes, the ideological, scientific and technological changes are also revolutionising our thinking. Educational innovation and search for alternatives is not to be considered in isolation to these factors. In fact, it is a corollary of global changes. The values of democracy, equity on the basis of technological advances are all closely linked to the spurt in educational opportunities. No country can afford to lose sight of its duty to open vistas of learning avenues to its youth. Education is an imperative of development and at best development is a consequence of education. While economic chaos can break the countries, education can enhance productivity and can make life satisfactory and purposive.

Distance education has become a necessity in our educational planning because of a number of other reasons also. The oft repeated reasons given by our planners and academicians are the ever expanding base of primary and secondary education, increasing awareness for female education, higher pass percentages in SSE, ICSE CBSE, higher income related investment in education, rapid urbanization, lack of job opportunities after schools, industrialisation and technological changes, etc. Besides these few factors that have pushed up the demand for higher education resource availability for opening new institutions is not consistent with the requirements. Poor nexus of higher education with job market or development of human resources has also contributed to the erosion of our social resources. Besides, a critical analysis of our losses and gains in the field of higher education would show that the record of achievement is not significant and that our higher education sector in its conventional shape calls for radical reforms in the light of global innovations and experience. The overwhelming state funding to the extent of about 78.3% and another 3.3% from the UGC and 11.4% from the fees has to be reappraised so as to avoid colossal wastage in routine courses and replicated research. Despite all the political support with which the formal institutions of higher learning are opened it cannot reach all the people and all the places and promote quality of education and so it may be a socially regressive consequence. In fact, higher education institutions thriving on State subsidies and not contributing to the cause of social development should be insulated and should pave way for Distance Education. This may not be a total recipe for reform and a panacea for progress but at least it will stop formal higher education from becoming a ritual without validity. It will also discourage elite planning for the elite.

Distance Education mode calls for the integration of various teaching-learning activities and communication technology. While printed course material is still the mainstay of distance education mode it has to target its groups of students for personal contact programmes, radio programmes, television, audio and video viewing, study centres, assignments/response-sheets, and textbooks, consultation facilities, seminars, tutorials, instructors etc. In this entire exercise greater collaboration with universities will be necessary for the proper utilization of our limited financial resources and for intensive utilization of educational expertise. They must interact vigorously. Instead of the spirit of competition between the universities and the distance education institutions a healthy spirit of cooperation should characterise the success of this alternative for which too the goals are national. To institutionalise the professional growth of its faculty and to specialise in the planning, production and distribution of its course material and information, special crash courses should be organised in Academic Staff Colleges and the centres for Professional Development in Higher Education. This will give the entire system a new orientation and edge to make it more modern and enable it to accept the present challenge. Besides, the personnel engaged in the system will have an interface with common problems and the process of micro planning so necessary for the success of the system.

Student Centred System

Distance Education mode is a student centred system which allows a self-paced learning process to him with minimum eligibility barriers and with freedom to choose from available techniques and through absence of personal attendance. The age old conventional classroom student-teacher interface has been substituted in this mode. With the help of various innovations through the T.V. electronic blackboard, fibre optics and telephones, the system has become versatile in its approach with standard audio-visual cassettes and micro computers. In our country the system still continues to remain tied to correspondence and the establishment of a few study centres and often ill-organised personal contact programmes. Whereas the preparation of course material is of prime importance and has to be done through chosen experts in various subjects with the regular meticulous drill of writing and reviewing, proof reading and final printing, the distribution of course material is nothing short of a business like approach where the material has to be supplied in the market on time. While study centres with learning aids, library, guidance, informal consultation of relevant material etc., have been emphasised as a part of the system for its success, home experiment kits, library loaning facilities, resource packs and talk back facilities have also to be emphasised in the context of student support services. No system can survive without a rigorous and periodic self-evaluation. This is more true of distance education than what has been seen in the case of our formal higher education system which is crashing under its own weight and which cannot sustain itself to face the challenges before it. Now education has become a coterminous activity of life. Whatever fancy vocabulary may define it, it is now a social reality which alone can prepare us to participate in the gains of global development. In fact, as Julius Nyerere has put it, it is education for self-reliance and as such it has to be taken seriously and addressed to community. At no place or time there is room for complacence. It must continue to experiment within its chosen frame of flexibility, innovation and relevance to social needs which alone will be considered as its virtues.

Establishment of Indira Gandhi National Open University besides epitomising our recognition of the viability of the system has a larger national purpose behind it. It is to provide an apex agency for the coordination and maintenance of academic standards under this system. Though now it has a large national network of 172 study centres and 16 regional centres for a student clientele of 1,45,000 it has a long way to go to establish its reach and accessibility of its packages which are different from those of other 35 universities and 4 State level open universities offering many conventional courses through correspondence. Its focus has to be educational emancipation of our youth and that is possible not through deluxe plans but through a more practical and viable Janata Approach in a democractic country of the size of India. In its statutory role it may not just have to go the way of the UGC to which our universities happen to be loosely connected but on the contrary its efficacy in bringing about coordination and excellence of academic standards will be a big challenge particularly in the light of educational autonomy that each of the universities in our country enjoys. Indira Gandhi National Open University will have to set its goal clearly with its imperatives clearly defined to bring about the much awaited qualitative improvement in Distance Education. In it the focus has to be on students' requirements. It is only through this that pervasive consequences for social development could be expected otherwise distance education as a system will not meet the aspirations of our people as a viable alternative to the present formal system of higher education. While it has to promote independent study it has to take cognizance of population pressure, increase in the level of expectations of people and overwhelm these through its capacity for generating confidence and credibility through technological innovations which can be within the reach of the common learners. From a nationally makeshift second alternative in India it has to emerge nationally as the only viable system capable of addressing itself to the social requirements and transition while remaining cost efficient and open.

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The Technological Institute of Textile & Sciences, Bhiwani (Haryana)

ADMISSION NOTIFICATION FOR 1992

The Institute prepares students for the following examinations of Maharshi Dayanand University, Rohtak :

	Course	Duration	Intake	Last date for receiving completed applications
B. Tech.				
(a)	Computer Science	4 Yrs	20	6 June, 1992
(b)	Textile Technology	4 Yrs	60	
(c)	Textile Chemistry	4 Yrs	10	

MINIMUM QUALIFICATIONS
B.Tech Courses

10 + 2 of Haryana Board (or equivalent examination) with atleast 60% marks in the aggregate of PCM OR B.Sc of M.D. University (or equivalent) with atleast 60% marks in the aggregate of PCM and having passed in English(optional or qualifying).

CRITERIA FOR SELECTION

Through an Entrance Examination to be conducted by M.D. University at Rohtak on 5th July, '92. Candidates appearing in 10 + 2 (or equivalent) examination can also appear in the Entrance Test. The Test will be of Objective Type comprising multiple-choice questions.

Notes

(1) There are no restrictions with regard to age or domicile.

(2) The Institute's prospectus along with the University's prospectus for B.Tech Entrance Examination can be had from the Director, Technological Institute of Textile & Sciences, Bhiwani, by sending Rs. 150/- by Money Order or on cash payment. The M.O. Coupon should clearly indicate that the prospectus is required for B.Tech courses. The Prospectus can also be purchased at Rohtak from some approved book-sellers.

DIRECTOR

Authority Relationship and Legal Structure in a University

N.L. Mitra*

We are in a difficult period of time. It is growingly realised, late though, that State run and autonomous bodies cannot be allowed to continue to waste funds on account of inefficient and unproductive management. It is time for university managements also to apply '*perestroika*' in self-evaluation of the university functioning. Normatively speaking, there is no place for inefficient and unproductive management in universities too. As such, two immediate objectives of university administration are going to be (a) maximising functional efficiency (by reducing administrative overhead expenditure in comparison with academic expenditure and increasing administrative efficiency to reduce per capita administrative expenditure), and (b) emphasizing internal resource generation. Along with these two objectives two other social responsibilities are also important. One is the universities' responsibility of coming closer to the society and becoming more relevant specially in the context of mass education, and second is the extension services. This write-up is primarily addressed to appreciating and understanding of 'management structure' and 'authority power flow' in order to examine whether any inefficiency is latent in the legal structure itself in the university set up.

If one examines the pattern of University Acts of various universities in India, one can find a general pattern both in regard to the structural form of 'management flow' and in legal regime of authority devolution and power arrangement as well. Let me explain a few management and legal concepts to make this point a bit clear and understandable. In management science, the structural forms of authority relation are primarily two. The first authority flow is known as 'line' and the second as 'staff. Though these are much talked about relationships in the structural flow of authority in any organisation structure, yet these are much misunderstood relationships. In this write-up 'line functions' are those which have direct responsibility for accomplishing objectives of an enterprise and the 'staff' refers to those elements of the organisation that help the 'line' to work most effectively in accomplishing the primary objectives of an enterprise[1]. In modern times, specialists dominate in all areas providing advice through consultancy services where high technicalities are involved and institutions are resorting to such services in more and more areas. As for example, a Vice-Chancellor perhaps requires almost constant advice from a legal professional; a computer technician; a financial management expert; a linkman with the government; a public relations man; an expert in mass communication, etc. In coming years he may require the advice of a management consultant, a data analyst, a youth counsellor so on and so forth. With the development of technological specialization more and more advisory functions are bound to be created for professionals. All these appointments are known as staff relations. But a Vice-Chancellor, two Pro-Vice-Chancellors, a registrar, five deputies, ten assistant registrars and so on can be linked up with a vertical line 'top down' level to show how power and authority flow up and down. These are therefore, line relations. The other side of interpretation of this line relation is 'accountability' which flows upwards. Figures 1 and 2 specify the 'management' and 'authority' flows in university management and authority structure respectively.

Now let us examine the legal position in structuralising the authority relationship. 'University' is a '*legapersona*', staturtorily constituted as a '*persona incorporalis*'! Generally speaking universities are legally founded by an Act of Legislature or Parliament. Presently, in some of the States all the State universities are brought under one State Act in order to bring a common statutory set up for all universities. Like any other *lega persona*, universities have also a '*corpa juris*', a '*common seal*' and a '*perpetual*' life. Like all other types of incorporated personalities, universities also do have their statutory life-line of 'authority-accountability flow'. Universities have two forums of functional authorities, viz., university authorities and university officials.

(a) University authorities

Some of the university authorities are statutory, i.e. prescribed by the Act itself. Some others are regulative authorities established by Statutes. Anyway, university statutory authorities are (1) Senate/Court/General Council; (2) Syndicate/Executive Council; (3)

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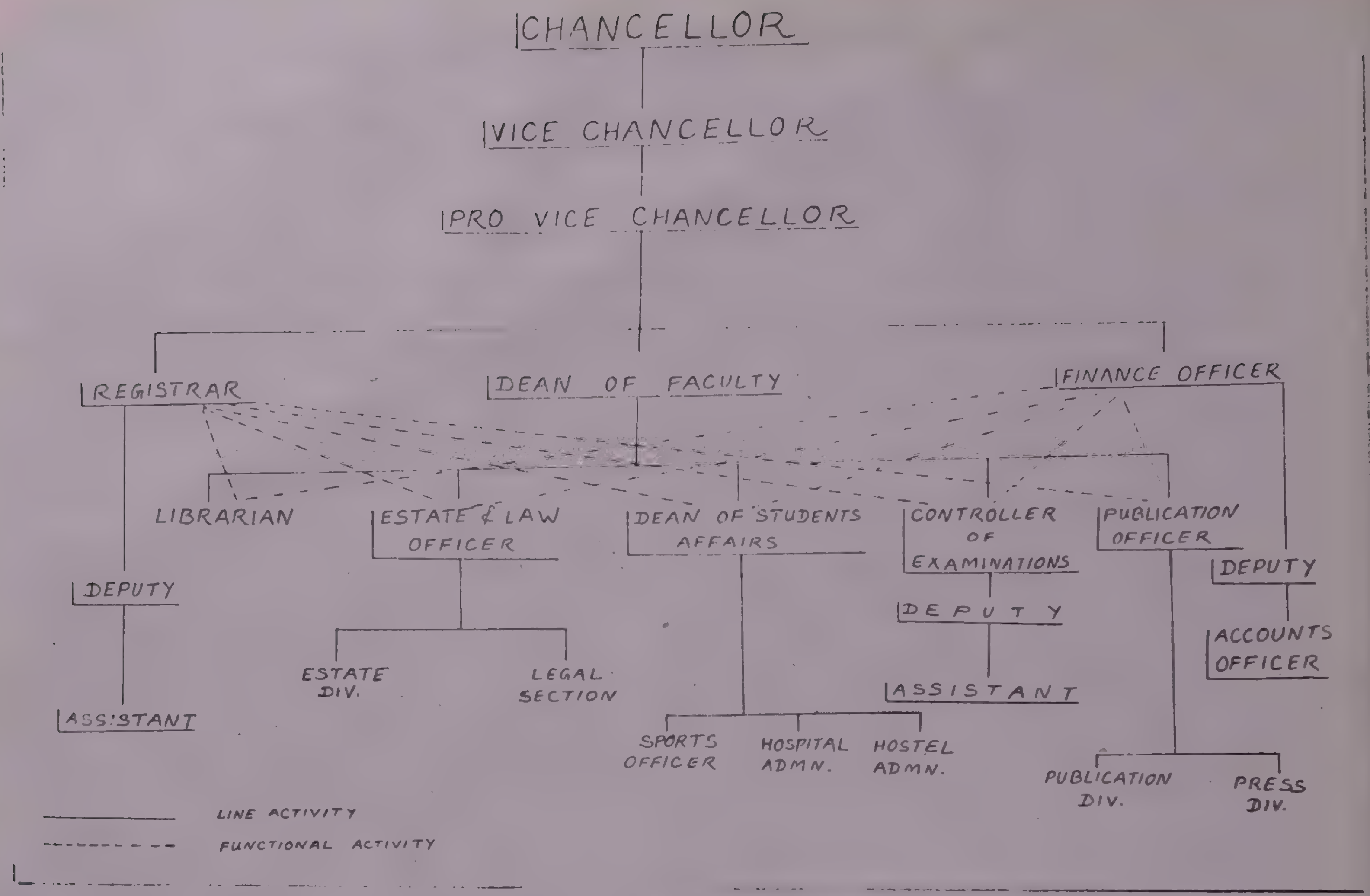
CHANCELLOR
VICE CHANCELLOR
PRO VICE CHANCELLOR
REGISTRAR
DEAN OF FACULTY
FINANCE OFFICER
LIBRARIAN
ESTATE & LAW OFFICER
DEAN OF STUDENTS AFFAIRS
CONTROLLER OF EXAMINATIONS
PUBLICATION OFFICER
DEPUTY
ASSISTANT
ESTATE DIV.
LEGAL SECTION
SPORTS OFFICER
HOSPITAL ADMN.
HOSTEL ADMN.
DEPUTY
ASSISTANT
PUBLICATION DIV.
PRESS DIV.
DEPUTY
ACCOUNTS OFFICER
LINE ACTIVITY
FUNCTIONAL ACTIVITY

Fig. 1 : Management Flow

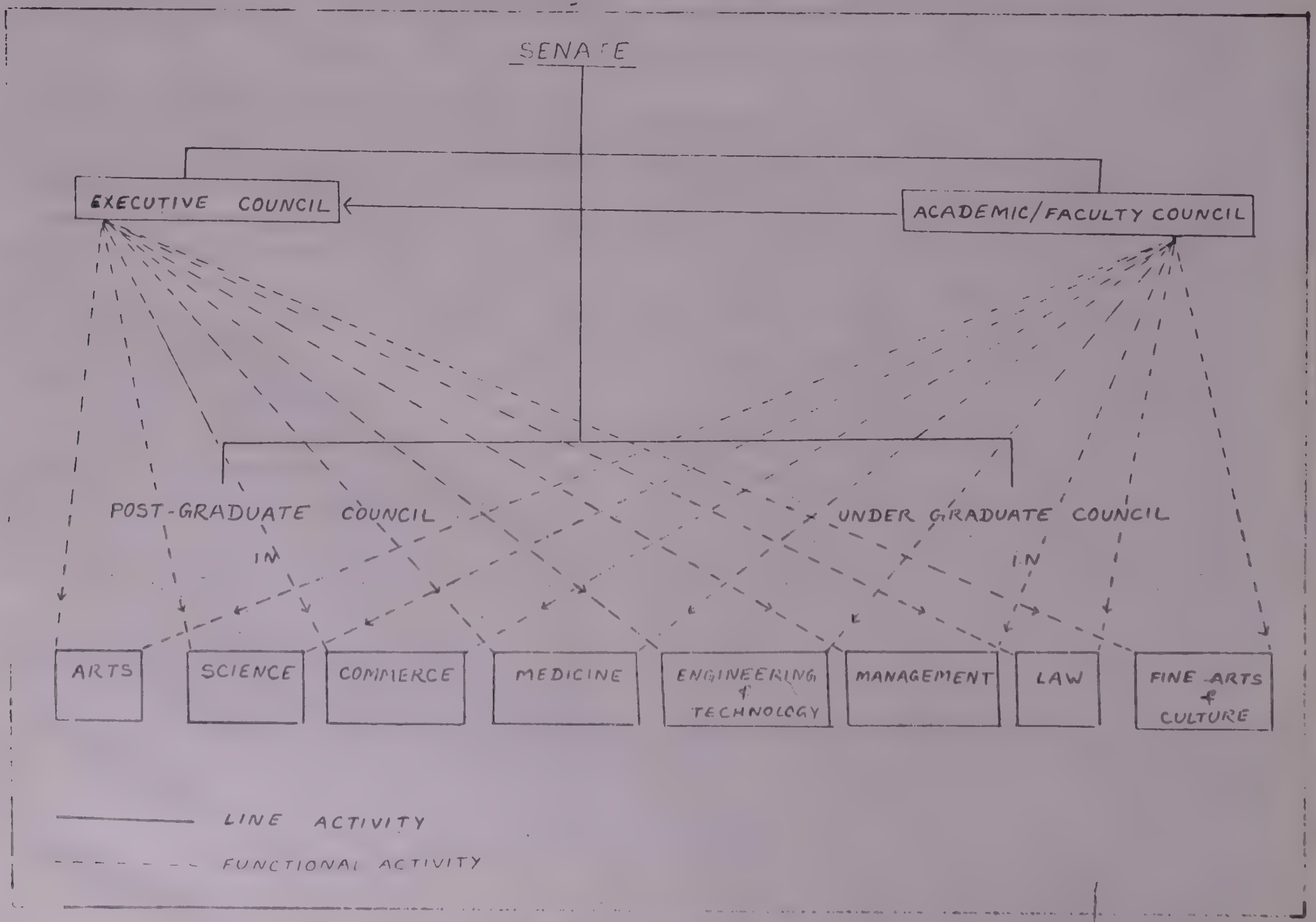
SENATE
EXECUTIVE COUNCIL
ACADEMIC/FACULTY COUNCIL
POST-GRADUATE COUNCIL IN
UNDER GRADUATE COUNCIL IN
ARTS
SCIENCE
COMMERCE
MEDICINE
ENGINEERING & TECHNOLOGY
MANAGEMENT
LAW
FINE ARTS & CULTURE
LINE ACTIVITY
FUNCTIONAL ACTIVITY

Fig. 2 : A uthority Flow

Academic Council/Faculty Council. Other regulative and recommendatory authorities are (1) Board of Studies (2) Undergraduate Council (3) Department of Studies. Generally speaking statutory authorities derive the authority from the Act itself. In some Acts of universities powers of these bodies are also specified in the statutes framed by the Senate and consented to by the Chancellor. Statutes are also made for constituting other regulatory and recommendatory authorities. Generally speaking the appex bodies of a university are: (1) Senate, (2) Syndicate, and (3) Academic Council.

(1) *Senate :*

In old Acts of Delhi and some others, Senate was shown as the *Supreme body*[2]. University Grants Commission suggests that this body instead of being the Supreme body in the university, must be a policy making and advisory institution and is to act as the legislative wing for framing Statutes for executive and regulative bodies and also for outlining authority relationship amongst statutory officials. It is, therefore, discouraged that Senate should be shown as the 'Supreme Body' to interfere into the executive functioning of the university. A classic example of the authority stipulation of the Senate is provided in the Aligarh Muslim University Act, 1920[3] . The provision stipulates, *inter alia,* the following powers for the Senate, viz.,

i) To review the broad policy matters in administering the university;

ii) To pass the annual accounts and approve budget;

iii) To make statutes for regulating the function of various university bodies and officials.

As the appex legislative body, it passes the statutes as suggested earlier. Such statutes can come ito operation only when these are approved by the Chancellor.

(2) *Syndicate* is the chief executive body of the university. Its power, authority and functions are generally stated in the Act. Sometimes Act itself authorises the legislative body of the university to legislate on the power arrangement, authority and functions of this Chief Executive body. This chief executive body has, *inter alia*, power to run the university in its day to day affairs through the officers; appoint and remove teachers and officers; administer the academic programme; make rules and regulations, etc. As the chief executive body, it has administrative, subordinate legislative and quasi-judicial functions. It has also power of delegation to other bodies or to officials any of its functions excepting those which are legislative (rule making power) in nature and quasi-judicial in character (as for example, taking disciplinary action). Legislative power cannot be delegated to any other body or official because this is a matter of collective process in which wider participation is needed from all interest group. Judicial powers cannot also be delegated without specific provisions in the Act/Statute both as to substantive and procedural issues[4].

(3) *Academic Council* is another important statutory body which has some managerial functions, some legislative powers, and a recommendatory authority. Academic management of standards, like approving course curriculum, taking action on the recommendations of the Board, recommending appointments, if necessary, for examinations conducted by the university, etc., are its managerial functions. It may recommend rules for conducting examination, guiding research, approve proposals of research etc. Sometimes the Council resorts to the method of committee functioning in view of day to day demands of some management functions. Standing Committees are appointed for various purposes specially concerning examinations.

II

Though in policy formulation and implementation works, university administration is required to run as a forum of collective wisdom, but in most of the daily execution and routine functions a university has to depend upon the officials. Like authorities, officials are also of two levels. Some officials are statutory and thus their designation, responsibility and authority and power and functions are based upon the 'Act' or Statutes. These statutory officers, therefore, draw their authority from the statutory stipulations. Of course, authorities often delegate some of their powers and functions to these officials. Generally speaking, these statutory officers are : Vice-Chancellor, Pro-Vice-Chancellor, Registrar and Finance Officer. Other posts of officials are created by the university (by the Executive Council in its statutory authority derived from the university legal framework). These statutory officers have executive and quasi-judicial authorities under the structural framework of the Acts and Statutes. As for example, a Registrar while refusing to register a student is acting as a quasi-judicial authority. A Controller of Examination (may be a statutory officer or other officer) taking an action against an examinee also acts as such. Whereas for executive functions these officials are governed by the policies determined in the statutory bodies and are accountable to them, for quasi-judicial functions they are accountable to the principle of natural justice and hence to the judicial system. Executive Council which is the chief executive body is also subjected to the review of the judicial system in all of its quasi-judicial functions which may arise when various interest groups are affected in the executive actions. That is to say, that a 'lis' can be seen existing.

Vice-Chancellor

The status of the Vice-Chancellor has been evaluated by Hon'ble Justice Jagannath Shetty in these words : "The Vice-Chancellor in every University is thus the conscience keeper of the University and constitutional ruler. He is the principal executive and academic officer of the University. He is entrusted with the responsibility of overall administration of academic as well as non academic affairs". It is therefore, quite natural that this post is given high importance in the authority-power arrangements through Acts and Statutes. The Vice-Chancellor is the ex-officio Chairman of both the statutory authorities, viz., Executive Council and the Academic Council. He thus leads the university's academic and executive wings and makes the highest contribution in policy determination and execution. His powers, generally speaking, are :

(a) *Statutory powers:* Statutory powers are expressed in nature which, *inter alia*, include, the power to ensure that the University activities and management are run in accordance with the legal framework. An act *ultra vires* the University does not bind the body. He has the power to regulate the work and conduct of teaching staff and non-teaching staff. Such a power to regulate does include power of inter-departmental transfer but not power to take disciplinary action[5].

(b) *Emergency powers :* It has been observed in the *Bangalore University case* that Emergency powers of a Vice-Chancellor are his statutory duty which is a magisterial function and should be exercised with adequate caution in emergent situation. Here he has an extra-ordinarily wide power. The extent of such a power is dependent on the nature of the extra-ordinary situation that the University faces at times. After examining the nature of the situation the Court in that case came to the conclusion that taking a step like cancellation of the examination of a few candidates for B.E. Examination on the logic of extra-ordinary situation of forceful mass-copying was to the mind of the Court not to be included within the emergency power. The Court there has gone to the extent of weakening the internal institutions for maintaining rule of law in the University while interpreting the emergency power of the Vice-Chancellor. So it is certain that it is difficult to believe that a Vice-Chancellor would be entitled to dismiss a staff on the argument of exercising emergency power. Emergency power is not to be considered as the delegated power by implication or in case of necessity. Nor is the actual authority who is authorised under the law to exercise the power in normal situation compelled to adopt the action taken by the Vice-Chancellor or bound by his decision. The authority may reverse the action on the presentment of the issue before it. The Statute only empowers the Vice-Chancellor with all authorities to deal with emergent situation. He is required to take all actions binding the Corporate authorities to keep up the normal functioning of the University and to bring normalcy in its functional environment. It is for this reason that the Court views this type of power as the magisterial power. No judicial or quasi-judicial decision taken by the Vice-Chancellor in his capacity as such, claiming emergency situation, could be said to be a justified step.

It will be wrong to refer to commercial agency functioning while reviewing the emergent power of the administrative functionaries, like a Vice-Chancellor. Of course, in an emergent situation an agent can do everything as if he is the principal himself to protect his interest[6]. So a railway company entitled to transport a quantity of butter was entitled to sell the butter in emergent situation[7]. This cannot be the fundamental logic founding the bearing of the statutory power of the Vice-Chancellor in an emergent situation. His power is widest, so much so as to meet immediate need to protect the rule of law in the University and to bring back normalcy. But he cannot claim powers within this framework which are related to legislative and judicial powers of other authorities. The Vice-Chancellor cannot break those bodies. He cannot validate any function that normally falls under the purview of a University body. In emergent condition what he can do is to take quick action to maintain the normal functioning of the University by maintaining essential services and then to quickly convene the meeting of the respective body to report the action taken.

(c) Delegated powers: One of the common styles of functioning in any corporate body with a plural chief executive body, is to run the organisation day to day through the process commonly known as the delegated process. The chief executive body generally delegates many of its functions, if not most, to the officials and get the things done. In the universities, either the Act itself or the Statutes provide for the power of delegation. As a result, many of the functions of the Executive Council of the university are generally delegated to the Vice-Chancellor. Such a delegation is sometimes expressed with prior delegation. It is sometimes implied based upon the implication of a situation. Sometimes, the Vice-Chancellor takes actin in a given situation presuming *ex-post facto* approval. The general principle of implied delegation is based upon the doctrine of indoor management specially where the rule of law provides for delegation and the chief executive takes an action, the third party can presume that the internal delegation arrangement is already completed.

Most of the conflicting situations in any university arise out of the delegated power-exercise. In *Marathwada University v. S. B. Rao Chavan*[8], the statutory position of the Vice-Chancellor was examined. Under Sec.11 (6) (a) of the Act, the Vice-Chancellor, as the principal executive and academic officer, was empowered to regulate the work and conduct of the officers and of the teaching academic and other employees of the University. Under Sec 24(1) (XXIX) the Executive Council was empowered to appoint officers and other employees. Naturally, the statutory framework of right to management of the Vice-Chancellor could not be said to be extended to take disciplinary action as because under the Statute the Vice-Chancellor was to manage the affairs within the provisions of the Statute. Under the Act right to appoint teaching and non-teaching staff belonged to the Executive Council. Hence the power of taking disciplinary action also belonged to the Executive Council. So, unless the Executive Council would delegate its power to the Vice-Chancellor, he could not serve any notice of termination of service, the court held.

Marathwada University case[9] is a very important one from the point of view of delegated power. Let us understand the fact of the case in brief. The Executive Council was to examine the report of its Committee on the facts ascertained as to whether one of its official was intentionally delaying the payment of a contractor and thereby undermined the reputation of the University. The Executive Council resolved to delegate its "full authority to the Vice-Chancellor for taking further proceedings and decision...... of the defaulting officers". The substantive issue raised here was, what was the extent of the power of the Vice-Chancellor in this case! Could he (1) further investigate on the issue by appointing another investigating officer; (2) take a decision so as to serve a show cause notice on the concerned officials; and (3) issue an order terminating the services? The question (1) related to administrative function and question nos. (2) and (3) related to quasi-judicial function.

Sec 24(1) (XIV) of the Act provided for delegation of power by the Executive Council, under which the Executive Council could delegate any of its powers (excepting power to make Ordinances) to the Vice-Chancellor or to any other officer subject to the approval of the Chancellor. Here one may raise an objection challenging the validity of delegating entire authority on any subject because there is a public policy of reposing authority on a plural body. Mere number of participants in the decision making in the body might be the design of the Statute for administering a public institution. Passing on entire authority to any official would, therefore, be a matter of debate. Another objection would be that a corporate functional body on which statutory powers were reposed could not abdicate its entire power and simply become functionally extinct or unnecessary.

It could be argued in the case that the statutory framework of the Marathwada University was such that powers like taking disciplinary action were specifically reposed in the Executive Council. That means, legislators intended that in similar cases matters would be required to be decided on the basis of the collective wisdom. Such a clear provision must not be allowed to be bypassed through any subordinate legislation like statute. The original authority arrangement could not be distorted by delegated arrangement. This is a kind of a 'basic structure' logic. In the *Marathwada University case* the Act itself provided for a very wide power of delegation excepting in the case of legislative power. But the procedure of delegation was also made very clear in the Act stipulating that delegation could be made with the approval of the Chancellor. But the procedure was never followed in its completeness either before the Vice-Chancellor served the notice of discharge or after. As such, delegation was never made.

Those who argue 'basic structure' logic, take the logic far too long in order to challenge any power reallocation through delegated process and try to confine the delegatory power with the logic of *ultra vires*. Even in the case of clear provision for delegation it is argued that delegation would be subjected to certain limitations, such as,

a) legislative power of Ordinance making as clearly stipulated;

b) residuary powers like power to delegate, power to revoke the delegation or restrict it etc., and

c) power preventing sub-delegation.

It can be argued that this general provision of delegation in the Marathwada University Act cannot be interpreted so liberally as to include all powers only because that the exception of the power is also mentioned. It may be noted that (b) and (c) are not mentioned in the general provision. Executive Council of a University is also required to do such delegated functions as delegated to it by the highest university body called the Senate, or Court or General Body or the University. Such a delegated power of the Executive Council cannot be further delegated. In the same way when the Executive Council had delegated the power of making 'further proceedings' to the Vice-Chancellor, he could not further delegate the matter of enquiry to another person by appointing an Advocate to make inquiry. In *Par-*

thasarathi v *State of A.P.*[10], the Government asked the Director to hold an enquiry in a matter. The Director appointed another person to conduct the enquiry. It was held that such a delegation was invalid. In the *Marathwada University case* the Executive Council delegated the power of making further proceedings to the Vice-Chancellor. So his appointing an Enquiring Officer to inquire about the matter could be questioned.

(d) Some will argue that such a general delegatory power does not include judicial or quasi-judicial power. In *Prakash Roadlines (P) Ltd.* v *Union of India*[11] the Supreme Court of India argued in length to establish that power to impose penalty under Sec.464 of the Delhi Municipal Corporation Act was distinctly different in character from that under Sec.463, which was concerned with judicial power. Hence *'any power'* could not include power under Sec.463. In the *Marathwada University case* also it could be argued that 'power of dismissal' or 'power to take dismissal proceedings' could not be said to be included in the delegate's functional ability.

Structuralists, of course, argue differently for the same conclusion suggesting that a general provision cannot authorise a function to be done in a way basically distorting the power allocation. Marathwada University Act provided the power of appointment and hence dismissal in the plural Executive Council because it wanted such administrative (appointment of staff) and quasi-judicial functions (dismissal of a staff) to be reposed in the collective wisdom. In case of administrative function of appointment of a staff the delegation is possible with general power of delegation. But a quasi-judicial function would require *specific delegatory power* because such a delegation distorts the power allocation, and such a function involves individual's right to seek justice from a body having exercised *'collective wisdom'* In *A.K. Roy* v *State of Punjab*[12] the Supreme Court held that 'any power' included only the minor administrative powers to be delegated for the convenience of administration. Here the Court's argument could form the core of arguments of structural formal philosophers. A formalist always argues that in quasi-judicial matters the law requires 'application of mind'. So in the event of delegation of such a function, the 'application of mind' of the Corporate functional body is missing. In *Bombay Municipal Corporation* v *Dhondu,*[13] the Supreme Court following such a formal argument, however, observed that it goes without saying that judicial power cannot ordinarily be delegated unless the law expressly or by clear implication permits it.

The common law courts sometimes enlarged the area of authority as well as levels of delegation in administrative functions. Garner opined that civil servants' power of execution of any duty imposed upon a Minister, does not involve delegation at all. The civil servants, according to him, take the decision not as a delegatee but as the *alter ego* of the Minister. So far as functioning of a policy decision in actual implementation of it, the Court makes a liberal interpretation. But in policy matters, the common law courts take a very restrictive view. For example, in *Sydney Municipal Council v. Campbell* [14], the Council had purported to use a statutory power conferred on it for the express purpose of acquiring land to effect improvement in the City Centre, not for the purpose but in order to ensure that the land's enhanced value, that would accrue as a result of improvements, that were carried out on adjoining land, would benefit the city (i.e. the council) rather than the private owner. The Privy Council declared the action of the Council to be void, notwithstanding acknowledgement that the action had been taken entirely *bona fide* in the interests of the City's residence[15].

Common law courts have however, "been prepared to accept some degree of delegation of functions which are preliminary to the actual taking of the judicial decision itself." [16] . In *Osgood v. Nelson*[17] a Committee was asked by the Court of Common Council of the city of London to investigate the allegation against the Registrar of Sheriff's Court for neglect of duties. On the recommendation of the Committee, the court of Common Council of the City of London dismissed him. The power of recommending was challenged. Here the House of Lords approved the action. But the author[18] suggested rightly, "had that Committee itself taken the final decision, or reported conclusions simply to be rubber- stamped by the Court of Common Council, the exercise of the power would have been void".

Here the Court takes a stricter view. In *Vine* v *National Dock Labour Board,*[19] Lord Somerrell said "Judicial functions normally cannot, of course, be delegated.... There are, on the other hand many administrative duties which (also) cannot be delegated". Following the Common law culture Indian judiciary also use to take a restrictive view on the delegation of power on disciplinary action. Unless the Statutes specifically or by necessary implication provide for delegation, judicial powers of an Executive Body cannot be delegated to any official. Where the Statute provides for delegation to a specific body or official, it cannot be delegated to others. In *Vine,* the National Board was given power to delegate its functions to local boards. Accordingly National Board delegated certain functions to the local Boards and certain powers to disciplinary Committees of those boards. In purported exercise of such powers a local disciplinary Committee had ordered dismissal of the appellant. Here the error was that delegation was made to a level not covered within the framework of delegation, hence the act was *ultra vires*.

Before closing, one issue must be made clear. Delegated functions of a public institution cannot always be explained with the analogy of agency functioning of the commercial world. Agent's anotherity to manage business implies authority to appoint and dismiss clerks and servants[20]. An authority of an agent is construed 'to include all necessary and usual means of executing it'. An agent's authority is extended beyond which is expressly or intentionally conferred. The basic principle here is that the agent must have all powers to respond to the authority given to him and the power covers 'all incidental acts necessary to make the authority effective'. Delegation mechanism as well as delegation functions are distinctly different and it should not attract any analogy of agency functioning in spite of the core philosophy being same in both the processes.

Notes

1. Koontz et al, **Management** (7th Edn) McGraw Hill, P.395
2. Sec.18 of the Delhi University Act,1922
3. Sec. 2 of the Aligarh Muslim University Act, 1920
4. See the decision in **Marathwada University v S.D Rao Chavan**, AIR 1989 SC 1592
5. **Ibid**
6. Sec. 189 of the Indian Contract Act, 1872 stipulates :

   > "An agent has authority, in an emergency, to do all such acts for the purpose of protecting his principal from loss as would be done by a person of ordinary prudence, in his own case, under similar circumstances".
7. **Sins v Midland Railway Co.** (1930) 1 KB 103
8. AIR 1989 SC 1582
9. **Ibid**
10. (1974)3 SCC 459; AIR 1973 SC 2701
11. (1989)4 SCC 15
12. (1986)4 SCC 326
13. AIR 1965 SC 1486
14. (1925) AC 388 PC
15. Garner & Jones, Administrative law (6th Edn.) p.126
16. Ibid, p. 124
17. 7(1872) LR 5 HL 636
18. Garner, see p. 124
19. (1956)3 All ER 939
20. **Sesson & Co. v Arqaellia & Co.** (1911)10 I.C. 895; **Bank of Bengal v Ramanathan Chetty**, 20 CWN 329

Rayat Shikshan Sanstha's

Dhananjayrao Gadgil College of Commerce, Satara

(Department of Business Education & Research)

Pin - 415001 (Maharashtra State)

(Affiliated to Shivaji University, Kolhapur)

ADMISSION NOTICE : M.B.A. & D.B.M. COURSES

Dhananjayrao Gadgil College of Commerce, Satara, invites applications for the admission to the Two-Year Course in Master of Business Administration (M.B.A.) and One-Year Course in Diploma in Business Management (D.B.M.) for the year - 1992-93.

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1. M.B.A. : A Bachelor's degree in the faculty of Arts, Commerce, Science, Engineering, Social Sciences or Agriculture of a Statutory University. The student must have spent 15 years for graduation (10+2+3 pattern). The students who have appeared and are likely to pass the final degree examinations can apply.
2. D.B. M. : Graduate of any Statutory University, with one-year experience at the Junior Executive Level or Diploma (3-year duration) in Engineering awarded and recognised by Board of Technical Examinations can only apply.

PROCEDURE FOR M.B.A. ADMISSION

The admission for M.B.A. Course will be confirmed following the declaration of results of Entrance Examination and personal interviews conducted by the Shivaji University, Kolhapur. The dates for Entrance Examination and Group Discussion, Interviews will be communicated in due course of time.

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Prin. Dr. S.R. Suryavanshi
PRINCIPAL

NON-VIABLE COLLEGES

A Case Study of South Gujarat University

Narayan Prasad Sharma*

Higher education has witnessed tremendous growth in terms of enrolment, number of educational institutions and the expenditure incurred. The affiliated colleges occupy a pivotal positon in the field of higher education sharing 87.8 percent of total enrolment at graduate level, 56.6 percent at postgraduate level and 15 percent at research level. Among the affiliated colleges, non-viable colleges constitute a sizeable protion and their number has only marginally declined from 1433 in 1977-78 to 1377 in 1985-86. In spite of such a large number of non-viable colleges, no effort has been made to look into the functioning of these colleges. The present study is a modest attempt in this regard and examines the functioning of two non-viable colleges – Government College, Daman and Navyug Science College, Surat – both affiliated to South Gujarat University, Surat.

This study, although limited in its scope, works out the unit institutional cost and analyses the academic and economic impacts of non-viability. It also traces the various causes of non-viability. The conclusions and main findings are summarised below. The policy implications and suggestions have been given in Part-II of this paper.

Non-Viable College

The concept of non-vviability, in the context of colleges, has been judged in terms of enrolment size and financial position. A college is non-viable if

i) Even after 5 years of establishment, it has not been able to grow to the minimum enrolment size of 400, and

ii) Financially, it is not in a position even to pay the salary to its teaching and non-teaching personnel, at par with the counterparts in aided/Government colleges from its financial resources. Financial resouraces include grants-in-aid/financial assistance proided by the various funding agencies.

Thus, prevalence of any of these two conditions is sufficient to merit the lable "non-viable college".

A Profile

i) Both the Government and private colleges under study were established in 1966 and thus have 26 years of existence. Government College, located at Daman, (the Headquarters of Union Territory of Daman and Diu, Dadara and Nagar Haveli) is Arts, Science and Commerce college and provides graduate education in Hindi, Economics and Political Science as special (main) subjects in Arts Faculty, Chemistry in Science Faculty and Audit and Accountancy in Commerce Faculty along with the limited combination of subsidiary subjects. The private college i.e. Navyug College is a Science College and offers B.Sc.(Special) courses of three years' duration in Chemistry and Statistics alongwith a few combinations of subsidiary subjects.

(ii) Every student is required to qualify 21 papers comprising 11 papers of special (main) subjects, 5 papers of two subsidiary subjects, three of English language and one each of S.T.D. (Science, Technology and Development) and I.E. (inter-disciplinary Subject) during the three years period.

iii) Despite 26 years of their existece, none of the two colleges could mature to the size of minimum enrolment required for viability. Fluctuations in the trend of enrolment was observed in both the colleges during the decade of eighties.

iv) The non-viable colleges have never been able to utilise their existing enrolment capacity. Although the magnitude of under-utilisation was high in both the colleges, it was alarming in Government College. The percentage of under-utilization of entrolment capacity in this college ranged between 70 to 83 percent, over the three years period. Maximum under-utilisation was found in Chemistry (Science Faculty) where it reached to the extent of 95% in 1986-87, 93% in 1987-88 and 1988-89. In Commerce, the percentage of under-utilisation varied from 79 to 86, whereas in Arts, it ranged from 38 to 65 during 1986-87-88-89.

In the private college, however, the percentage of under-utilisation was relatively lower. It was 35% in 1986-87, 34% in 1987-88 and 17% in 1988-89 and thus declining over the three years period. In this college, the magnitude of under-utilisation was higher in Statistics.

Quality of Input (Students Admitted)

The quality of students was judged from the percent-

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age of marks obtained in Higher Secondary level. It was found that the quality of students admitted in non-viable colleges was very poor.

i) In Government College, Daman, in Arts Faculty, no student had 60% or above marks at Higher Secondary level. 23% had the marks between 50 and 60 percent and 64% between 40 to 50 percent.

ii) Among the students admitted in first-year B.Com., no student had marks above 55% at Higher Secondary. 21% of the students had the marks between 50 to 55% and 68% between 40 to 50% marks at Higher Secondary level.

iii) The quality of students admitted to Science Faculty was relatively better . Of the Students admitted to first-year B.Sc. in 1986-87, 44% had marks above 60%, 34% between 55-60 and 22% between 50-55.

iv) In private college too, the students admitted to first-year B.Sc. in 1986-87 had poor educational attainment in terms of the percentage of marks obtained at Higher Secondary level. Most of the students (74%) had marks between 40 to 50% and only 6% of the students had above 55% marks.

Student-Teacher Ratio

The student-teacher ratio is taken as an indicator of effectiveness of teaching-learning process.

i) The student-teacher ratio in Government College as a whole was very low in comparison to private college. In Government College, it was 5:1 in 1986-87 and 1987-88 and 9:1 in 1988-89 whereas in private college this ratio was 13:1 in 1986-87, 15:1 in 1987-88 and 17:1 in 1988-89. Thus, the student-teacher ratio in private college increased over the three years period.

ii) In Government College, the pupil-teacher ratio was lowest in Science Faculty where it could not exceed 2:1 over the three years period. The student-teacher ratio was almost the same in Arts and Commerce Faculty and ranged from 7:1 in 1986-87 to 13:1 in 1988-89.

iii) In private college, the student-teacher ratio for Chemistry (Honours) course varied from 16:1 in 1986-87 to 20:1 in 1988-89 and thus was five times higher than in Statistics.

Infrastructure

Except hostel facilities, the educational infrastructure in Government College is good and as per the norms laid down by the University Grants Commission/affiliating University (South Gujarat University), but in private college, the condition of infrastructure is poor. Even the building and library of this college is shared by other two colleges and the college lacks in basic amenities and hostel facilities.

Items of Expenditure

(i) The main items of college expenditure are: Salary of teaching and non-teaching, staff, library services, subsidies to students, laboratory facilities, repairs and maintenance of college building, office and other expenses etc. Almost all the funds available with the non-viable colleges were spent on running of the colleges, and 1 to 2% in Govt. College and less than 1% in private college was spent on acquisition of assets.

(ii) Salary is the single dominant item consuming most of the recurring expenditure of non-viable colleges. During 1986-89 out of the total expenditure, 85 to 95% of expenditure was incurred on salary out of which 68% to 70% accounted for the salary of teaching staff. Less than 1% of expenditure was incurred on purchase of library books and journals/periodicals (except on 1988-89, where the percentage of expenditure incurred by Government College on library was 1.20). In private college, due to having only Science Faculty, the proportion of expenditure on laboratory services was relatively higher ranging from 2.38% to 3.25% against 0.17% to 0.24% expenditure in Government College. Subsidies to students accounted for 0.65% to 1.06% expenditure in Government College and 3.63% to 5% in private college. In both the colleges nearly 4% to 5% amount was spent on repairs and maintenance, office and other expenses.

Thus about 9/10th of the total expenditure accounted for salary of teaching and non-teaching staff and a small amount was left for academic and extra-curricular activities.

Unit Cost

(i) Unit institutional cost is a multi-variate function and is influenced by many factors, important among these being : size of enrolment, number of teachers, student-teacher ratio, average of teaching staff, type of courses etc. (ii) The per student institutional cost consisted of teaching and non-teaching cost of recurring nature. The unit cost in respect of Government College worked out to Rs.9,560 in 1986-87, Rs. 16,040 in 1987-88 and Rs. 15,229 in 1988-89. The reason for upward movement in the unit cost in 1987-88 was that the teachers were paid arrears due to revision of their pay scales. In 1988-89, due to rise in the enrolment size of the college and resultant increase in the student-teacher ratio, non-filling up of some vacant posts of some teachers in some subjects, the unit cost came down. The unit cost per student for private college was calculated at Rs.4,054 in 1986-87, Rs.6,164 in 1987-88 and Rs.5,617 in 1988-89. Thus the unit cost per student in Government College was higher by 2.35 times in 1986-87, 2.60 times in 1987-88 and 2.71 times in 1988-89 in comparison to private college. The higher unit cost in the Government College can be attributed to three factors, namely, lower student-teacher ratio, small size of enrolment and higher average salary of teachers.

(iii) The subjectwise unit cost analysis reveals that in Government College the unit cost was highest in respect of Chemistry(Honours) course where it was estimated at Rs.33,225 in 1986-87 and increased to Rs.65,741 in 1988-89. The unit cost in the case of Commerce(Honours) course was Rs.7,038 in 1986-87 and increased to Rs.59,071 in 1988-89. In Arts faculty the unit cost was lowest in respect of Hindi(Honours) course and was highest for Economics (Honours) course. For Hindi, unit cost varied from Rs.4,556 in 1986-87 to Rs.6,218 in 1987-88 and in the case of Economics, it increased from Rs.10,488 in 1986-87 to Rs. 79,596 in 1988-89.

(iv) Between the two subjects in the private college, the unit cost was higher in the case of Statistics (Honours) course in comparison to that of Chemistry.

Components of Unit Cost

(i) The item-wise cost analysis reveals that during 1986-87 Government College spent Rs.5,631 to Rs.11,921 per student on salary of teachers, Rs.2,311 to Rs.3,363 on salary of non-teaching staff, Rs.92 to Rs.93 per student was spent on purchase of library books and journals and Rs.47 to Rs.100 on purchase of laboratory items. An amount of Rs.212 to Rs.359 per student was subsidised to student in terms of scholarships and fee concession. Rs.37 to Rs.73 was spent on repairs and maintenance. Office and other expenses accounted for Rs.178 to 640 per student.

(ii) The per student expenditure incurred on each item was relatively lower in private college as compared to Government College. The item-wise break-up of per student expenditure was : Rs.2,260 to Rs.4,064 on salaries of teaching staff, Rs.1,057 to Rs.1,585 on salary of non-teaching staff, Rs.21 to Rs.48 on purchase of library books, Rs.119 to Rs.128 on purchase of science practical items, Rs. 159 to Rs.180 on scholarships, stipends and fee concession, Rs.84 to Rs.105 on office expenses.

Economic Impact of Non-Viability

Non-viability of an institution has wider economic implications on unit institutional cost, utlisation of infrastructure facilities, eligibility to get development grants from University Grants Commission, quality and adequacy of educational infrastructure etc.

(1) In Government College, due to non-viability, the unit cost went higher from Rs.5,806 in 1986-87 to Rs.10,296 in 1987-88 and Rs.9,548 in 1988-89. Had the college been viable in terms of enrolment, Rs.5,806 per student in 1986-87, Rs.10,296 in 1987-88 and Rs.9,548 in 1988-89 would have been saved without affecting the quality of education. Like-wise private college too, due to non-viability, the unit cost worked out was higher by Rs.1,755 in 1986-87, Rs.2,081 in 1987-88 and Rs.1,071 per student in 1988-89.

(2) In Government College, due to non-viability, the classrooms were utilised only upto the extent of 50% in terms of teaching duration (on the assumption that the normal hours of teaching per day are eight) and only upto 20 to 25% in terms of students sitting capacity. Similarly, library and laboratories were under-utilised to a significant extent.

(3) Since the building and library of private college are shared by other two colleges (namely Navyug Arts College and Navyug Commerce College under the same management), the degree of under-utilisation of educational infrastructure in this college was marginal.

(4) The educational infrastructure of the non-viable college was inadequate and poor (with the exception of Government College, Daman). A number of colleges, it was observed, were running in Dharamasalas and under iron sheds. They lacked civic and other basic amenities.

(5) The non-viable colleges, due to small size of enrolment were unable to get the development grants from University Grants Commission as they did not fulfil the condition of minimum enrolment criterion.

(6) There was a lot of scope for economics in non-viable colleges. The unit cost per student in Government College could be reduced by Rs.7,701 in 1986-87, Rs.13,284 in 1987-88 and Rs.12,876 in 1988-89 by utilising the existing enrolment capacity. In private college also, there was scope for reducing the unit cost by Rs.188 in 1986-87, Rs.1,640 in 1987-88 and Rs.1,421 in 1988-89 by utilising the existing enrolment capacity.

Academic Impact of Non-viability

(1) Non-viability apart from developing an exceptionally high cost and wasteful education system has also wider academic implications on teaching-learning process, academic environment of an institution, quality of intake and output of students, magnitude of wastage and stagnation and standard of education.

(2) The poor quality of students admitted, inadequate library facilities and scarcity of better quality of teachers in these colleges indicate that the quality of education provided in non-viable colleges is sub-standard.

(3) Non-viability does not encourage proper academic environment in the colleges. The students, instead of sitting in the classrooms, wander here and there and teaching-learning process does not take place from week to week, and sometimes even for months together. The main factors responsible for this state of affairs are : very small size of the classes, high rate of absenteeism among students in the classes, indifferent attitude of students towards study, permission to students to appear in the university examination irrespective of their minimum required attendance in the classroom teaching etc. As a result of it, although every teacher is shown to have 16 to 18 periods per week, the actual workload per teacher does not exceed two to three hours per week and that also from the month of August to January. Due to this nominal workload in practice, teachers devote a lot of their time and energy to non-academic issues like appeasing the bureaucrats, studying the C.C.S., financial rules, leave rules or in political discussion instead of pursuing knowledge and creative research. This leads to the under-utilisation of teachers' calibre, merit and their capacity and give birth to non academic matter which are not conducive to a healthy education system.

(4) High Magnitude of Wastage and Stagnation

Wastage covers the students who fail or drop out before completion of a course and stagnation refers to the situation where a student takes more than three years in completing the degree course. High magnitude of wastage, apart from indicating the inefficiency of an institution, also results in under-utilisation of educational infrastructure and higher effective unit cost.

(i) The magnitude of wastage in Government College was alarming. More than 75% of total 78 students admitted in 1986-87 to first-year classes either failed or dropped out and could not acquire the graduate degree in the given duration of time. The stage-wise break-up of wastage was

1st year	32%
2nd year	21%
3rd year	24%
Total :	77%

(ii) In the private college, the magnitude of wastage was 46% out of which 17% was at first stage (1986-87), 10% at second stage (1987-88) and 19% at third stage (1988-89),

(iii) If the quantity of output produced is taken as an indicator of efficiency, the private college functioned more efficiently than the Government College.

(iv) In the Government College, the magnitude of wastage was highest in Economics and Political Science where the percentage of wastage reached to the tune of 100% and not even a single student could complete the graduate course successfully. In Science and Commerce, the percentage of wastage was 95 and 75 respectively.

(v) In private college, between the two subjects, the magnitude of wastage was relatively higher in Chemistry than in Statistics.

(5) Poor Quality of Output

The quality of graduate output has been judged in terms of academic performance at graduation.

(i) The analysis of performance of students by various marks group at Higher Secondary and Graduation level revealed that in Government College 33% in the marks group of above 60%, 5% in marks group 45-50%, 14% in the marks group 40-45% could maintain the same level of performance. The rest deteriorated. No one in the marks group 55-60% and 50-55% could maintain the same level of performance. 22% in the marks group 35-40% slightly improved their performance, 67% students in the marks group of above 60% and 72% in the marks group of 50 to 60% either failed or dropped out. The rate of wastage in other marks group varied from 50% to 81%.

(ii) In private college, 20% in the marks group of 55-60%, 33% in 50-55% and 12% in the marks group of 45-50% at Higher Secondary level, maintained the same level of performance at graduation. 20% in the marks group of 55-60%, 11% in 50-55% 50% in 45-50% and 41% in 40-45% also improved their performance at graduation. In this college too, a large number of students in different marks groups either failed or dropped out before completion at graduation.

(iii) Thus, quality-wise also the functioning of private college was more efficient as compared to the Government College and the percentage of students who improved and maintained the same level of performance in different marks groups, was higher in this college.

(iv) The course-wise analysis revealed that in the Government College, the percentage of those maintaining the same level of performance in various marks groups was higher in Science as compared to Arts and Commerce. The worst situation was in Social Science stream where not even a single student could successfully complete the graduate course and the rate of wastage was 100%.

(v) In the private college, the rate of improvement and of maintaining the same level of performance was better in Statistics than in Chemistry.

(iv) The net outcome of the above analysis is that the quality of graduate output in non-viable colleges was invariably poor which is attributed at least partly to non-viability.

(6) Deterioration in the Standard of Higher Education

The non-viability of an educational institution leads overall deterioration in the standard of higher education which is reflected in the poor quality of students admitted, poor and inadequate infrastructure, correspondingly poor quality of students graduated and high magnitude of wastage and stagnation.

Effective Cost

Effective cost is the amount spent by an institution for producing a graduate over three years period. Thus, effective cost covers per unit cost plus cost due to wastage.

(i) The effective cost for producing a graduate in the Government College was calculated at Rs.66,880 out of which Rs.40,829 was unit cost and the rest Rs.26,051 was cost due to wastage. The effective cost varied from faculty to faculty and within a faculty from course to course.

(ii) The effective cost was highest for Chemistry estimated at Rs.2,38,373 followed by Commerce and Hindi for which the effective cost worked out to Rs.1,57,915 and Rs.22,714 respectively. In Social Science stream, the entire expenditure incurred on providing education in Economics (Rs.1,13,997) and in Political Science (Rs.52,635) was wasted and not even a single student could be produced as graduate output in these two subjects.

(iii) The effective cost of producing a graduate in private college was Rs.19,341 out of which Rs.3,506 was lost on account of failure and dropouts. Between the two subjects, the effective unit cost was Rs.18,372 for Chemistry and Rs.25,813 for Statistics.

Causes of Non-viability

(a) Teachers' Opinion

(i) Many factors, in the opinion of teachers, are responsible for non-viability in Government College, Daman. Important among these are inadequate feeding centres and poor result of Higher Secondary classes, poor hostel facilities, English in place of Gujarati as medium of instruction, poor bus service from feeding areas, bureaucratic controls and indifferent attitude of administration towards the development of the college.

(ii) The causes of non-viability in private colleges differed from those of Government College and the teachers expressed the view that limited subject combinations, single faculty, lack of hostel facilities and poor results of Higher Secondary classes in the feeding schools, are among the important causes of non-viability.

(b) Observations

i) While giving affiliation to new colleges, the need of opening a new college in the area/region/city is not properly examined and due consideration is not given to the enrolment position of nearby existing colleges. In the haste to open new colleges, efforts are not made to expand the existing institutions. As a result of it, non-viable colleges find it difficult to have viable enrolment. Whereas Government College, Daman (established in 1966), was facing enrolment crisis, the South Gujarat University, Surat, gave affiliation to new colleges in neighboring areas(Vapi and Paradi). This in turn, resulted in the further deterioration of enrolment health.

The political considerations/interferences and lucrative motive of management behind opening the new colleges are among important factors responsible for over expansion of the colleges.

(ii) The State universities, while giving affiliation to the colleges in general, and to Government colleges in particular, do not insist upon fulfilment of affiliating conditions pertaining to educational infrastructure. As a result of it, the non-viable colleges without having minimum educational infrastructure get affiliation. This accentuates the tendency to open new colleges instead of expanding existing ones.

(iii) The explanation on non-viability also lies in the fact that the feeding schools to non-viable colleges are inadequate.

(iv) The high magnitude of wastage and stagnation at first and second stages in non-viable colleges affects the admission in second and third year classes which in turn, reduces the overall enrolment of non-viable colleges.

(v) Limited subject combinations in private college and English as a medium of instruction in Government College are among other reasons of non-viability. The general attraction of students towards the courses/subjects offered by the non-viable colleges is also on decline and there is a need for diversification of courses in these colleges.

II

Policy Implications and Suggestions

Keeping in view the high unit cost per student, high magnitude of wastage and stagnation and the type of quality of output produced by these non-viable colleges, we come to the conclusion that such small colleges are not only uneconomical in terms of unit institutional cost, but are also not viable academically. An underdeveloped country, like India, which is facing severe economic crisis, is not in a position to afford such a high cost education particularly when it is not achieving the educational objectives. For optimum and proper utilisation of limited funds available at the disposal of higher educational and for improving and maintaining the standards, it is necessary to overcome this problem. The following measures are suggested in this regard.

(1) Continuance of the non-viable Colleges, should be reviewed :

The continuance of all the non-viable colleges should be reviewed periodically by the affiliating universities and States concerned. Each case may be considered on the basis of its past enrolment position and the potentialities of its viability should be examined carefully. The University Grants Commission may help the universities in this task through its expertise guidance.

In tribal, hilly and rural backward areas, in order to remove the educational backwardness in the field of higher education, the State Governments may opt to subsidize higher education in terms of scholarships and stipends to students rather than through opening non-viable colleges. This alternative will not only be more economical for States, but will also ensure better quality of education to students. Further concessions may be given to the students of backward areas by reserving some seats for them at the time of admission in the better institutions.

(2) Enrolment should be increased :

Efforts should be made to increase the enrolment in non-viable colleges. Following steps may be taken in this regard:

i) The viability (in terms of student's enrolment) of each subject/course, should be revised periodically. The continuance of the subjects/courses, whose students' strength has either been stabilized at very low level or is declining persistently, should be reconsidered. For instance in Government College, the enrolment in Social Science stream (Economics and Political Science) and in Chemistry has stabilised at extremely low level. It is, therefore, suggested that such courses which are not popular among students, should be replaced by other subjects which are preferred by a large number of students. Like-wise in private college, the students' strength in Statistics was far below and the college should have a second look at the course.

(ii) In the Colleges, which are having adequate educational infrastructure, professional courses may be started to increase the enrolment strength. In the Government College, there are ample potentialities to run the professional courses like diploma/certificate courses of short duration in Computer Programming, diploma in Rural Development, Diploma in Commercial practice, etc. These courses may be started with some marginal additional expenditure. However, for development of all these activities, the innovative attitude of the Principal as well as that of the Union Territory Administration is called for.

iii) The hostel facilities in Government College are not only poor in quality but are also inadequate in quantity. There is an urgent need for expansion and improvement in the hostel facilities for attracting the students from far flung areas.

iv) The in-fighting between the Principal and teachers on the one hand, and too much bureaucratic controls on the other, have hampered the development of Government College. These things should be avoided in future. Ad hocism in the appointment of Principal(s) and teachers should be discontinued. Both the Principal and the teachers should develop better understanding with each other and both sides should devote themselves to the cause of development of the college in academic matters. The teachers' involvement in various academic and administrative matters will prove fruitful.

v) In order to motivate the students for admission in the College, the prospectus, highlighting the achievements, the educational facilities and activities of the college should be brought out by the college administration.

vi) The problem of medium of instruction should be sorted out in a certain time frame. Each teacher may be instructed and given one year's time to learn Gujarati language. They may be suitably advised to teach in Gujarati after developing necessary competence.

vii) Atleast 5 to 10% of the expenditure should be allocated to the various academic (other than the expenditure on salary of teaching and non-teaching staff) and extra-curricular activities like debates, group discussions, prize distribution, cultural activities, library services, games and sports, seminars etc.

(3) More subjects at Principal level (main optional subjects) should be introduced in Private College:

More subjects at Principal level and some professional courses should be introduced in the private college and for that educational infrastructure like building, hostel facilities, library etc., should be expanded. If the management is not in a position to expand the educational infrastructure this college may be merged with other two units of the same management so that economies of scale may be realized.

(4) The need of opening a new College should be examined carefully:

The need of opening a new college in the area/region/city should be examined thoroughly and except academic grounds, no other considerations like political advantage/interference should influence the decision to open a college. The follow issues should be examined properly before giving affiliation to a new college:-

i) What are the existing facilities for higher education in the area?

ii) The enrolment position of the nearby colleges.

iii) The number of feeding schools of the proposed college and their enrolment position in Higher Secondary classes.

iv) The potentialities of its viability.

The new College may be given affiliation/recognition if nearby existing institutions are having sufficient enrolment and there are adequate feeder schools. In other words, the potentiality of its viability, prima facie, should be bright. It has been observed that the State Government, due to their political interest and State universities due to political pressures, have not followed the guidelines on terms and conditions of affiliation of colleges by a university, prescribed by University Grants Commission. We feel that State Council of Higher Education at State level can better monitor and control the recognition aspect of new colleges and, therefore, these Councils should be set up without any further delay.

In the meanwhile, University Grants Commission may set up a Committee for disposing of affiliation matters of new colleges. It should be made mandatory for all the universities to take prior approval from this committee while giving affiliation to a new college .

(5) Affiliating universities should strictly adhere to all its affiliating conditions, particularly that of infrastructure facilities while giving affiliation to a new college. No distinction should be made in this regard between Government College and private college.

(6) University Grants Commission should frame a policy on locational aspect of the colleges.

The University Grants Commission has utterly failed in controlling the increasing number of non-viable colleges. In spite of recommendations by Kothari Commission in 1966, no concrete initiative has been taken to advise the universities regarding the manner in which this problem could be sorted out. We, therefore, suggest that University Grants Commission, as a premier institution for determining and maintaining the standards of higher education, should take up this matter seriously and proper guidelines pertaining to the locational aspects of the colleges should be framed.

G.B. PANT UNIVERSITY OF AGRICULTURE & TECHNOLOGY,
PANTNAGAR , DISTT. NAINITAL, U.P. 263145

ADMISSION NOTICE 1992-93
(For Post-graduate programmes at Hill Campus, Ranichauri)

A Competitive Entrance Examination shall be held on Sunday,the 12th July,1992, at PANTNAGAR only for admissions to the following Postgraduate programmes to be run at the Hill Campus of this University at Ranichauri (Tehri Garhwal).

M.Sc.Ag. **(Horticulture,Vegetable Science, Seed Science & Technology) – 3 seats in each discipline.**

Candidates holding B.Sc.Ag. & A.H./B.Sc.Ag./B.Sc.(Forestry)/B.Sc.(Horticulture)/B.Sc.(Biology) degrees with 55% marks in aggregate or equivalent O.G.P.A. and with not more than one-third division at High School and Intermediate levels.

For details, Information Brochure and Application form can be obtained by sending an account payee Bank Draft for Rs.15/- in favour of "Pre-Entrance Examination Cell Revolving Fund Account, G.B. Pant University of Agriculture & Technology, Pantnagar" on State Bank of India or United Commercial Bank Pantnagar Branch, with a self-addressed envelope of 10"x12" size bearing postage stamp of Rs.6/- or on cash payment at the Counter in the Admission Cell at Pantnagar on any working day.

Closing date : **20.6.92,** prescribed fee Rs.100/-.

Application forms will be on sale from 1st June,1992.

S.K. SHARMA
REGISTRAR AND COORDINATOR

Reconstructing the English Syllabi

Basavaraj Naikar*

Sri Aurobindo once said very sadly that the falsest possible education is imparted in India. This statement is literally true in the case of English teaching in India. At present, for example, the undergraduate syllabus begins with the Elizabethan poetry and drama which is neither taught nor understood properly by teachers and students respectively. I doubt if even the teachers are able to scan the prosody of Elizabethan literature without the help of some books written by British or American authors. When the student comes to the postgraduate level, he is made to learn the literatures of different nations and centuries and forms which do not have any direct relevance for his life. He is made to learn linguistics and phonetics from abc at the postgraduate level which remains as a junk in his mind as he cannot make use of it when he becomes a lecturer in a college again because it is not prescribed there. Further, the literary works prescribed are so far apart from one another in age, country or theme that neither the teacher nor the student can do any sustained thinking or writing on these works. In spite of his wide but miscellaneous reading he will not be able to organise the knowledge into a unified whole. Most of the time the Indian student's sensibility nourished on his Hindu or Muslim or Jain culture, does not allow him to respond to the Western books as he is not made to see either parallels or contrasts between Indian classics and the Western. That is the reason why the student, and sometimes even the teacher, is compelled to seek the help of cheap guides and companions, without realy responding to and enjoying the works of art. The study of English literature is, therefore, bound to be rather mechanical and half-hearted. The following alternatives may be pursued with real reward and profit.

First, all the English departments in Indian universities should be converted into those of Comparative World Literature. The British Literature should be kept to a minimum and even the said minimum should be such as is nearest to the Indian sensibility, history or culture. Supposing we have to prescribe a Dryden's play we can choose *Aurangzeb* instead of *All For Love* so that our students can compare the historical hero with the dramatic one as projected by the author. In case we have to prescribe a Shakespeare's play we could choose *Measure for Measure* rather than *Hamlet* as the former provides a very good parallel to the present day official corruption in India. This is not to belittle the universal importance of *Hamlet*.

Second, the fashionable subjects like phonetics and linguistics should be made more and more functional by being prescribed at the undergraduate classes instead of at postgraduate level and being combined with the general linguistics of the native language like Kannada or Tamil. Both the teacher and the student should be weaned away from parrot learning business and orientated towards comparative linguistics.

Third, every paper should have ten texts (neither seven nor fifteen). In Poetry paper, for example, the first text should be a classical Indian book translated into English, say, like *The Ramayana*. The second text should be a contemporary regional Indian classic translated into English like Kuvempu's *Sri Ramayana Darsanam* or *Kamba Ramayanam*. The third text could be an Indian English epic like Sri Aurobindo's *Savitri* or K.R.Srinivasa Iyengar's *Sitayana*. The fourth text should be Homer's *Iliad;* the fifth, Dante's *The Divine Comedy*; the sixth, Milton's *Paradise Lost*; the seventh, Firdousi's *Shahnamah*; the eighth, Goethe's *Faust;* the ninth, Camoens' the *Lusieds* and the tenth, *Kalewala*. I am very much aware of the fact that this syllabus is quite formidable. What I suggest is that in every paper such an international and inter-cultural perspective should be provided to the student, though the texts may consist of only one or two cantoes each. Whereas the degree maniac may be contented with these cantoes, the researcher can pursue interest by reading up the full texts at his leisure.

When prescribing texts for fiction paper, we may choose Hardy's *Tess of D'Urberville* or Dickens' *Oliver Twist* rather than Jane Austen's novels or George Eliot's. Hardy's concept of Fate is nearest to the Indian idea of *Karma*.

In the Drama paper Kalidasa's *Sakuntalam*, Mohan Rakesh's *Adhe Adhure,* Sri Aurobindo's *Vasavadatta* may be preferred. Wole Soyinka's *The Lion and the Jewel,* Moliere's *Tartuffe,* Shaw's *Man and Superman,* Japanese Noh Plays, Arthur Miller's *Death of a Salesman*, Chekov's *Cherry Orchard* may be preferred.

(Contd. on page 24)

Department of English, Gulbarga University, Gulbarga-585106.

An Important Innovation

Prof. S. K. Khanna, Vice Chairman, University Grants Commission, delivered the Convocation Address at the third annual convocation of the Pondicherry University. He said, "The Inter-University centres are important innovations for networking giving a newer dimension for building up of excellent facilities with optimum utilisation of resources. These Inter-University centres are managed by the university system and they work as field stations for all universities with equal access. Such a culture of doing things together is important for the University system". Excerpts

The Pondicherry University was established in October, 1985. The main objective of this University is to disseminate and promote knowledge by providing innovative instructions and research facilities in various branches of learning. The city of Pondicherry is renowned as a centre of spiritual emancipation and educational pursuits since days of Sage Agasthya who chose this august place for his Ashram of higher learning. In the recent times, Pondicherry have received prestige and glory throughout the world by the teachings of Sri Aurobindo and the holy Mother for humanity and the growth of spiritual brotherhood of man. The place also has blessings of Mahakavi Subramania Bharathi, the greatest Tamil poet and Sri Bharathidasan.

The jurisdiction of the University includes Pondicherry Union Territory, Andaman and Nicobar and Lakshadweep. This has provided a unique status to the Pondicherry University with multiple regions and languages and a true national character. The rich cultural heritage of Pondicherry includes Raman Ronalland Library, the museum, the French Institute of Indology, Jawaharlal Nehru Institute for Medical Education and Sri Aurobindo Ashram, a principal centre of intellectual and spiritual activities. The environment of the Pondicherry University campus of 780 acres with a magnificent sea sight gently sloping towards the sea on the east with richness of culture of city of Pondicherry is eminently conducive to maintain and preserve the inherent high traditions and culture.

With maturity, the Pondicherry University has developed its campus and established a number of directorates, schools, departments and centres. Befitting with its objectives, the Directorate of Culture and Cultural Relations along with Salim Ali School of Ecology and Sri Aurobindo School of Eastern and Western thought are unique components of its academic structure. In a short span of about five years the university could establish two directorates, six schools of higher learning, eleven academic departments and eight academic centres of activities like academic staff college, centres for adult and continuing education, future studies, women studies and facilities for English Language teaching, etc. The University has been able to attract over 124 eminent persons to work on its faculties. The University is today offering facility for postgraduate and doctoral programmes and research in most of the subject areas. It is hoped that the University shall remain concerned about adding on any major academic activity in consonance with the objectives and ideals for which it has been established.

The real world is quite different. The world is not at all rosy or materially rewarding. In India we are passing through a difficult phase of scarce resources, massive population and manifold pressures hindering and disturbing our peaceful existence. Our problems are more daunting and complex primarily because of the inexorable demographical pressure. Population in India in 1901 was 230 million, and in 1991, it is well over 850 million. This growth itself is a serious challenge for the management of the basic needs of food, shelter, health and education.

There is no single or simple solution to any of the problems facing us. The problems and the solutions are deeply, and tightly interconnected. Practical and imaginative approaches to them have to be thought of. In addition, we have to inculcate and preserve in the society our cultural heritage. To maintain our position in the frontline with other nations, we need our own human resources competently exposed to the recent developments in all spheres of knowledge. We must strive to achieve a harmonious synthesis between traditional values and acquisition of modern scientific knowledge through our academic pursuits. Rapid depletion of agro-eco system, diminishing energy resources and inadequate infrastructural facilities are some specific problems which have to be handled in right earnest. There are ways of doing things without losing time.

It is fortunate for us to have received an opportunity for University education. We should know that we are a small fraction of India's population. Even with about 200 universities and 7000 colleges in India, the percentage of youth population which receives higher educational opportunities is dismally small. As years go by, the demand on higher education is going to increase steeply. The educationists and planners will have to adopt many innovative ways of enhancing educational opportunities. While we do this, we need to ponder over a serious mis-match and some contradictions. The statistics show that 20% of over 17 million educated unemployed are graduates and post-graduates.

We should realise that an average annual income of about six families in India is equivalent to an expenditure incurred per student. There is, therefore, a very serious need to correlate higher education training and research with manpower needs. Universities have to work together with various sectors for deciding the content and the scope of areas of study. More so, when we know that over 8000 recipients of doctorate degrees are available to us every year but they do not have any meaningful absorption in the various development sectors. Hence, we need to redesign seriously our education and research programmes by breaking away the classical barriers and water-tight compartments, which have been unproductive. Education merely for the sake of education is luxury which we can hardly afford. Research and teaching should – and must – reinforce each other towards professional bias.

The academic bodies of the higher education system must come forward in creating a balance in the academic content of the courses and to help the youth infused with professional skill for employment or self-employment. The Universities have the responsibility of providing subject knowledge and skills to our youth for generating employability and gainful participation in the development and reconstruction of our nation. Nothing is more important for our good than to train youth in wisdom and skill. Wise and skilled youth is the real strength of a nation. We also need to create more opportunities for continuing and life long education. Pressure for degrees and diplomas should be reduced to attract youth population to enter into society at an appropriate age and link itself with ground realities at the earliest and become productive. This alone would generate an understanding and demand for knowledge and skill. Rewards of this process of education will be very high.

We have positive resources in terms of population, land, water, mineral and other raw materials. We need to coordinate resources with the manpower. If we succeed, then there is no reason, why we cannot come out of poverty. The University cannot rest itself on an ivory tower or exist in vacuum. If the University remains insulated from the society, it would be disastrous, both for itself and the society. There is another important aspect which has to be taken serious note of by us. The world statistics show that we have 40% of the world's illiterates, 20% of our people are without safe drinking water and 30% of our people are without sanitation facilities. These problems can be resolved through rational policy changes and management skill. The problems concerning illiteracy, health and environment cannot wait for a day longer. We should resolve them fast or they will get worst with passage of each day. We need to have a major national focus over arching these problems. The University has a major role in this respect. We would owe an explanation to the society at the close of the century, if we fail to act creditably. The technology missions have clearly laid down the tasks which we have to carry out. The University system must take up the challenges and participate with full dedication and sincerity in the mass-action for national regeneration. Any mass-movement to combating evils would need sensiting our people to all our concerns. We need to involve ourselves with passion and attitude of a mass campaign. Let us stir out to educate our people and be educated in return.

Universities also need to take certain innovative measures for their own functioning for teaching, research and evaluation. Internal interaction between the departments of the University is growing in spite of the structural impediments. The interdisciplinary programmes are emerging to broadbase our higher education system. The College system is dependent on the University system which otherwise is self-occupied. In recent years, some measures have been taken to improve the quality of programmes and to build modes of networking. Academic staff colleges bring teachers together from different universities and colleges to benefit mutually. The identification of areas of research and infrastructural funding have improved the capabilities of the University system. The results are rewarding. Large number of research fellowships, research scientists have yielded encouraging results.

The Inter-University centres are important innovations for networking giving a newer dimension for building up of excellent facilities with optimum utilisation of resources. These Inter-University centres are managed by the university system and they work as field stations for all universities with equal access. Such a culture of doing things together is important for the University system. We have some university centres already established, and one each in the field of education media and library networking are in the process for being established as registered societies. Further, with emergence of open university system, it has been possible to have an alternative mode for higher education. And it is estimated that at least 25% of the student enrolment at the undergraduate level will be with open university system.

During the recent times, there have been some significant achievements in Science and Technology. We have tested nuclear devices underground and have been able to orbit satellites. Our scientists have also produced artificial diamonds 100% indigenously, smallpox has been wiped out and effective solutions have been worked out for birth control. Review of the achievements of our manpower makes one feel proud and rightly so. The 50s and the 60s were the prime periods when India launched industrial development and technology research. Nearly half of India's Five Year Plan outlay have gone into massive irrigation and multipurpose river valley projects for which our engineers deserve credit. The Green Revolution backed up by the development in water resources, has made India self-sufficient in providing food to the millions. Impressive transportation networks of roads, rails have provided mobility and accessibility to millions of our people living even in the remote areas. We have successes visible in thermal and nuclear power stations, telecommunications, and many other branches including material processes, etc. Since 1960, over 25 years, our production of coal and steel has raised to 4 times, cement and petrol 6-8 times up and fertilizers over 40 times.

Despite a spectacular growth, there are serious deficiencies too. We have over 2 million S&T personnel and still our country is not self-sufficient. True, no country is or can ever be really self-sufficient, because each one will have to fill in the gaps by import balancing and related export. Unfortunately, we have a very disturbing import-export equation and we do not have enough to show for meaningful export.

Frontiers of knowledge are fast expanding and in turn the acquired knowledge and skill are becoming obsolete. We need to necessarily update our educational content through lifelong and continuing education. Universities must be the fountain heads of updated knowledge and skills.

Reconstructing the English Syllabi

(Contd. from page 21)

The syllabus should be structured in such a way that there should emerge a pattern of parallels or contrasts so that the student would be able to notice them quite early in life and continue to think along those lines in an advanced manner later. By consciously organising our syllabus, we can definitely enable the modern student to utilise his limited energy to make his learning a more rewarding experience than it is now. He should be made to relate the text to himself or to his culture or situation. Let the UGC authorities direct their attention to this aspect and take the necessary steps in the matter.

A full paper for the study of the Bible should be prescribed for non-Christian students who know next to nothing about it and consequently feel continuously diffident about the Biblical sources and references that they come across in their study of Western Literature. Another paper should be prescribed for the comprehensive study of world history that is relevant to their literature. British history from 14th century onwards must be made compulsory for the student who offers English as his major subject.

Whoever wants to take up English as his major subject in a college should be made to offer ideal combinations like Sanskrit and regional language or philosophy, religion and psychology. They should be positively prevented from taking up unconnected subjects like economics, statistics or mathematics which boost up their scores without adding up to their literary sensibility.

Another serious defect in our educational system (especially in language or literature departments) is that no originality is encouraged. A fellow who mugs up and vomits a readymade answer supplied by a cheap guide gets a higher score than a person who analyses a text from his own personal point of view, however elementary it may be. Every student should be made to collect some data, say, like local dialectal vocabulary, to be later compiled into dictionaries by the teachers. The student should be consciously trained in the art of data collection and classification initially and in the art of analysis and evaluation later on. The student, in addition to getting his degree somehow or the other, should add his own mite to the realm of knowledge.

Similarly, a full paper should be devoted to translation from regional language into English. The problems of translation should be related to and discussed in the Comparative Linguistics paper. Every paper should begin with the regional culture and go on widening upto international range. The texts and topics should be mutually complimentary and thematically integrated rather than miscellaneous in tone and mosaic in structure.

Besides, the UGC should encourage the Indian universities to specialise in different subjects or approaches. For example, if there are five or more universities in a State, one of them could be asked to specialise in Critical Theory; another in Comparative Epic; the third one in World Drama; the fourth one in Mystic Literature and the fifth one in Comparative Lyrical Poetry. After ten years this should be reshuffled. The Indian universities need not imitate the Western ones blindly. We should evolve our own angle and method of classification in teaching as well as in research.

CAMPUS NEWS

Revised Education Policy Presented

A national mission to achieve universalisation of elementary education before the year 2000, a review of the examination system, setting up of education tribunals and extension of "Operation Blackboard" have been proposed under a set of modifications to the National Education Policy, 1986. The "Revised Policy Formulations", presented to Parliament by Human Resource Development Minister, Mr. Arjun Singh, have also proposed reorganisation of the Board of Secondary Education by giving it due autonomy, decentralisation of the functioning of the All India Council of Technical Education and provision of generic vocation courses at the higher secondary level.

To bring a measure of uniformity all over the country, it is proposed to make the Plus 2 stage as part of school education everywhere. Redrafting of the adult literacy programme in the light of the successes so far and the setting up of an autonomous commission for Sanskrit and other classical languages have also been proposed. Mr. Arjun Singh said the National Education Policy, 1986 has stood the test of time. It enunciated a comprehensive framework to guide the development of education in its entirety. While that framework continues to be relevant, the developments during the last few years and the experience in implementation of the policy have necessitated certain modifications, he said.

While the NEP had, in 1986, proposed achievement of universalisation of primary education (up to class V) by 1990 and elementary education (up to class VIII) by 1995, these targets could not be achieved. This has prompted the Government to revise the targets now by stipulating that "free and compulsory education of satisfactory quality to all children up to 14 years of age" be achieved before 2000 A.D. A national mission is to be launched in pursuit of this goal.

Targets have also been revised in respect of vocationalisation of school education. It is now proposed that vocational courses should cover 10 per cent of higher secondary students by 1995 and 25 per cent by 2000. Steps will be taken to see that a substantial majority of the vocational students are employed or become self-employed. The Government will also review its recruitment policy to encourage diversification at the secondary level.

As for the examination system, the document acknowledges the continued disenchantment with the present system and has accordingly proposed a National Examination Reform Framework that would serve as a set of guidelines to the examining bodies which would have the freedom to innovate and adopt the framework to suit the specific situations. Evaluation at the institutional level will be streamlined and the predominance of external examinations reduced, it is said.

The setting up of educational tribunals has been envisaged in order to provide faster redress of grievances, both at the national and State levels. These tribunals will be fashioned after administrative tribunals.

The revised policy document has for the first time come out with a strong statement on secondary education. While the Boards of Secondary Education will be reorganised and vested with autonomy so as to improve the quality of education, steps will be taken to widen the access to secondary education with emphasis on enrolment of girls and students belonging to SCs and STs, particularly in science, commerce and vocational streams.

The scope of Operation Blackboard is to be enlarged so as to make the provision of essential facilities in more primary schools. From a limit of schools with two classrooms and twos teachers, it will now be made applicable to schools with three classrooms and three teachers as well.

Rabindra Bharati Convocation

Addressing the 17th annual convocation of Rabindra Bharati University, the Chairman of the State Education Commission and former Finance Minister, Dr. Ashok Mitra, said the present education system had made a mockery of the ideals of Rabindranath Tagore.

Dr. Mitra said, "Where will those who have pledged to turn Tagore's dreams into reality take shelter in the present doldrums. At a time when the campuses of educational institutions have been converted into battlefields, Tagore's ideals are bound to fail."

Dr Mitra said the ideas of Tagore and Mahatma Gandhi were identical regarding removing some of the major problems of the country, unemployment being one of them. He said in order to overcome the burden of foreign loan and provide jobs to the thousands of graduates, the nation would have to follow the ideals of Tagore.

The Vice-Chancellor of the university, Dr Pabitra Sarkar, said the Union and the State Governments had jointly taken up a project to shift all the departments from the Jorasanko campus, where Tagore's house was located, to the Emerald Bower campus on B.T. Road. Museums, art galleries, research centres and a guest house would be set up on the Jorasanko campus.

The Governor and Chancellor of the university, Prof. Nurul Hasan, stressed the necessity for the development of modern science for the country's smooth progress.

Prof. Hasan said instilling humanistic values should have special significance for the university in order to realise gurudev's "holistic view of education".

Prof. Hasan praised the involvement of the university in the ongoing "mass literacy campaign" in the state and hoped that it would help in converting the campaign into a mass movement.

The university conferred honorary D.Litt. degrees on eight eminent people for their contribution in various fields of art.

CABE Committee on Distance Education

An 11-member Committee under the Chairmanship of Prof. G. Ram Reddy, Chairman, University Grants Commission, has been set-up by the Minister of Human Resource Development in his capacity as Chairman of the Central Advisory Board of Education (CABE) to advise on the direction of the growth and development of open university system in the country, including the establishment of open universities in the States; reorientation of correspondence courses to the distance education mode and the measures for achieving this; role of the Indira Gandhi National Open University (IGNOU) in the promotion of distance education system in the country; and role of electronic media in promotion and development of distance education system.

The other members of the Committee are : Shri Hari Kumar Audichya, Education Minister, Rajasthan; Shri P.G. Momin, Education Minister, Meghalaya; Smt. Bhumi Dhar, Education Minister, Assam; Prof. V.C. Kulandaiswamy, Vice-Chancellor, IGNOU, New Delhi; Father T.V. Kunnunkal, Chairman, National Open School, New Delhi; Dr. R.V.R. Chandrasekhara Roa, Vice-Chancellor, Andhra Pradesh Open University, Hyderabad; Dr. R.G. Takwale, Vice-Chancellor, Yashwantrao Chavan Maharashtra Open University, Nashik; Lt. Gen (Retd.) Dr. M.L. Chibber, Executive Director, Management Development Institute, Gurgaon; Dr. Meenakshi Gopinath, Principal, Lady Sri Ram College for Women, New Delhi; and Shri Abhimanyu Singh, (Member Secretary), Director, Department of Education, Ministry of Human Resource Development, New Delhi. The Union Education Secretary, Vice-Chairman, UGC and Director, National Council for Educational Research and Training (NCERT) would be permanent invitees to the meetings of the Committee. The Committee is expected to submit its report within two months.

ICWA Ludhiana Chapter

Dr. Khem Singh Gill, Vice-Chancellor of the Punjab Agricultural University, Ludhiana, while inaugurating Ludhiana Chapter of Cost Accountants of the Institute of Cost and Works Accountants of India stressed on the role of cost accounting to facilitate savings of precious resources.

Dr. Gill noted that the cost accountants could help an organisation by developing an adequate cost accounting management information system covering the consumption of raw materials, utilisation of labour and the overheads and by suggesting the measures to improve the overall efficiency. He hoped that with the unprecedented changes even in the guided and protected economies and rapid progress in industrialisation, the role of the professional cost accountants as well as the management accountants would also increase.

Dr. Gill further observed that the world was moving towards free economy with lesser and lesser controls by the State. In this era of politico-economic changes and reforms, there is a need to have emphasis on productivity and cost consciousness, he said.

Mr G.S. Grewal, President of the Ludhiana Chapter of Cost Accountants, discussed in detail the objectives and achievements of the Institute of Cost and Works Accountants (ICWA) of India.

Management Development Programme

The Department of Business Administration at Aligarh Muslim University, in collaboration with the Academic Staff College, organised a two-week Management Development programme for University and College Administrators. The Programme consisted of three components related to management concepts and processes, skill improvement, and attitudinal development. Inaugurating the Programme, Prof. M.N. Faruqui, Vice-Chancellor, Aligarh Muslim University, advised the participants to avail of the opportunity provided to them to improve their managerial skills and contribute to better administration of the University affairs. In his valedictory address, Prof. S.M. Yahya, Pro-Vice-Chancellor, exhorted the participants to be objective-oriented and learn to work in a relaxed manner. Prominent figures in the field of management, both from inside and outside the University, were invited to act as resource persons for various sessions of the programme which was attended by nine Assistant Registrars and one Deputy Registrar. Prof. Azhar Kazmi, Chairman, Department of Business Administration, acted as the Programme Director.

Regional Resource Centre

Shri B. Rachaiah, Governor of Kerala and Chancellor of Calicut University, inaugurated the U.G.C. Aided Regional Resource Centre for Coaching Minorities at Calicut University. The Centre is intended to activise and elevate the existing centres for coaching educationally backward minorities, which are located in the universities by assisting them with reading materials and supervisory guidance. The Governor said that these Centres should perform a coordinating role in developing linkage with minority commissions, U.P.S.C., P.S.C., Staff Training Colleges etc., for the welfare of minorities. They should organise orientation programme for the functionaries of the coaching centres in the region. He also inaugurated a book exhibition arranged in connection with Dr. Ambedkar's Centenary Celebrations.

U.G.C. has selected two universities in India namely, Calicut and Aligarh as Regional Resource Centres for South and North India respectively. The minority coaching centres function in the following southern States : (1) Karnataka (2) Andhra Pradesh (3) Tamil Nadu (4) Maharashtra and (5) Kerala. They all come under the jurisdiction of Calicut University.

Intellectuals Meet

The Regional Centre of the Indira Gandhi National Open University (IGNOU) located at Patna organised a meeting of intellectuals consisting of select senior academics, principals of colleges, academic counsellors and government officials in education to make the people aware of IGNOU's organisational structure and functions and the role of regional and study centre.

Dr. S.K.Sharma, the Regional Director (In-charge) discussed at length the concept of distance education, its difference from the conventional system, aims and organisational structure of IGNOU and functions of regional and study centres through various transparencies. He also discussed the perspective planning of opening of new study centres in Bihar. Others, who participated in discussion were Prof. M.N. Karna, Director of A.N.Sinha Institute of Social Studies, Dr. S. K. Sinha, Ex-Director, Secondary education, Bihar, Dr. Shamsad Hussain, Director, Institute of Correspondence Courses, Patna University, Dr. U.K. Singh, Director, Indian Institute of Business Management, Patna and many principals of local colleges. The participants expressed concern over the deteriorating educational standards of the conventional universities and academic sessions delayed by two to three years in Bihar. They however opined that the development of distance education led by IGNOU will prove to be a boon for the people of Bihar.

Astronomical Data Centre

An Astronomical Data Centre (ADC) supported by the Department of Science and Technology (DST) has been set up at the Inter-University Centre for Astronomy and Astrophysics (IUCAA), Pune. The purpose of the ADC is to obtain and maintain in a conveniently usable form catalogues and data bases of relevance to research in astronomy, astrophysics and related areas.

The ADC at the present has about a hundred and fifty catalogues acquired from other data centres. The collection is being constantly updated, and will soon include archival data bases from various missions along with the software required in the analysis.

Presently the ADC aims to provide to the user community :

(1) List of catalogues and data bases available.

(2) Particular catalogues on paper, floppy diskettes, cartridges or tapes.

(3) Acquisition of catalogues, data bases and software from other centres upon request, when such material is not already available with the ADC.

(4) Access to foreign databases through the IUCAA Internet link, when the remote user has a PC-AT and modem.

(5) Support for travel and stay at the ADC, where necessary.

Details of the services available and other information may be obtained by writing to : Ms. Ashwini Sohoni, IUCAA, Post Bag 4, Ganeshkhind, Pune - 411 007.

Wings of Success

The British Airways have offered scholarships worth $10,000 under its newly sponsored "Wings of Success" programme. The scholarship programme is open to all students travelling on the airlines for the fall semester 1992 to the USA for undergraduate or postgraduate studies.

British Airways will offer 15 prizes – 10 worth $1,000 and 5 return tickets from the USA to Delhi, Bombay, Madras or vice versa on the airline.

Students wishing to participate should submit their biodata along with the name and address of the college and course they propose to undertake in the USA to the British Airways', "Wings of Success", P.B. 11236, Bombay-400020.

News from Agricultural Universities

Agriculture MBA Course at Hisar

The Chaudhary Charan Singh Haryana Agricultural University (CCHAU) proposes to start a new course in master of business administration (agricultural business) academic session beginning July this year.

The Vice-Chancellor, Dr Amrit Lal Chaudhry, said that in view of agriculture competing with industry, a provision for this course from the next session had been made so that agricultural graduates could get the required confidence and take up agricultural-based self-employment. Agricultural education would also become more vocational and practical-oriented, he added.

In this two-year course, the functional areas of management, namely, marketing and financial management, production and personnel management as well as industrial relations – depending on the demand for specialisation – would be taken up on priority.

Minimum qualifications for admission to this course would be Bachelor's degree or Master's degree in any discipline from CCSHAU or an equivalent degree in art, commerce, science or any other discipline with at least 50 percent marks. The eligible candidates would be called on an all-India basis for a written test consisting of three papers.

Vocational Training Course

An integrated Vocational Training Course of one month's duration for unemployed youth, sponsored by Centre for Training and Employment of Border Youth, was recently inaugurated by Shri Jagjit Singh Hara, Member of the Board of Management, Punjab Agricultural University. The course was being conducted by the Department of Extension Education of the University. The main objective of the training was to train unemployed, educated youth of the State in agricultural vocations like Dairy, Poultry, Piggery, Fishery, Bee-keeping etc., so that they may prepare themselves for self-employment.

Speaking on the occasion Mr. Hara advised the youth to undertake seed production which was far more profitable than the traditional crop production. He offered his services to help these youth in getting practical training in modern seed production technology on his own farm.

Dr. B.S.Hansra, Professor-cum-Head, Department of Extension Education, while speakings on the occasion advised the trainees not to run after petty jobs but to take up profitable agricultural vocation and become master of their own destiny. Similar ideas were expressed by Major N.I. Singh, representative of the sponsoring agency.

Fifty trainees from Border districts (Amritsar and Gurdaspur) participated in this training. The trainees were given a stipend of Rs.500/- in addition to free lodging and boarding.

New Groundnut Variety

The Chandra Shekhar Azad University of Agriculture and Technology, Kanpur recently developed a new groundnut variety CSMG 84-1 capable of giving as high as 28-30 q/ha average yield with the kernel percentage being 72-75, maturing in 120-125 days duration besides being tolerant to pests and diseases. It is double seeded, spreading type Vergenia group variety. The new variety possessing 20-30 percent higher yield over existing cultivars, was identified in the Annual Kharif Oilseeds Workshop held at Dharwad (Karnataka) during April 1992 organised by the Indian Council of Agricultural Research. In addition to Uttar Pradesh, the ICAR found this variety suitable for other States like, Punjab, Haryana, Rajasthan, Andhra Pradesh and Tamilnadu. The Oilseeds Research Scientists hope that this variety, due to its shorter duration, spreading type and high yield characters would be preferred by the farmers. The area under groundnut would increase consequently and cultivators would benefit much by obtaining higher yield and income thereby.

News from UGC

Nodal Agency for PHISPC

The University of Delhi (DU) has been identified as nodal university for the university system for the implementation of the Project of the History of Indian Science, Philosophy and Culture (PHISPC). A Memorandum of Understanding (MoU) signed between the University of Delhi and the PHISPC on February 12, 1992 envisages constitution of a Preparatory Committee of the PHISPC to consider at appropriate time the question of proprietorship of the volumes prepared under the project, their publication, sale, royalty and other related matters. The funds to be provided by the University Grants Commission for the project will be channelised through the DU.

The various agencies including the UGC, the Indian Council of Medical Research (ICMR), the Council of Scientific and Industrial Research (CSIR), the Department of Science and Technology (DST), the Indian Council of Social Science Research (ICSSR), the Indian Council of Historical Research (ICHR) and the Indian Council of Philosophical Research (ICPR) involved in the programme will be networked to ensure coordinated approach in the implementation of the interdisciplinary project.

The UGC has agreed to allocate an amount upto Rs.20,00,000/- for the project toward expenditure on award of fellowships, organisation of workshops, seminars, studies, commissioning of monographs and provision of infrastructural equipment and services. A grant of Rs.5,00,000/- as the first instalment has already been sanctioned to the nodal university.

News from Abroad

CBT Wave in Australia

Competency-based training (CBT) which focusses on a person's ability to perform a particular task rather than their achievement relative to others in a group, is sweeping across Asutralia's education sectors like a winter flu virus to schools, technical and further education colleges and universities.

CBT has already been adopted by Australian industry and state TAFE colleges are now committed to its implementation in all vocational courses. This will require investment by colleges in time and resources, including retraining staff.

Commonwealth, State and territory governments have agreed that vocational education and training will be delivered, assessed and certified as competency-based. The reform is closely linked to changes in Australian industry where it is planned to have 90 percent of the workforce covered by competency-based standards in two years. In education it is concerned with student results rather than how long a course is supposed to take.

An inquiry for the federal government's National Board of Employment, Education and Training found the impact of competency-based training to be widespread, especially in TAFE colleges but with the potential to affect the other sectors as well.

The National Office on Overseas Skills Recognition is funding the development of competency-based standards in some 20 professional fields, including architecture, dentistry, engineering, psychology and veterinary science.

The aim is to provide a better process for recognising the skills of migrants coming to Australia but the work being done is likely to influence university courses as well.

Despite significant reservations about the relevance of competency-based standards to higher education, the Australian Vice-Chancellors' Committee and the Higher Education Council have both set up working parties to report on the issue.

Fraudulent Research

A survey conducted by the American Association for the Advancement of Science, the world's largest scientific society, reveals that more than a quarter of scientists questioned suspected their colleagues of fabricating, falsifying or plagiarising research in the past ten years. It is a serious problem in the wake of some well-publicised scandals about academics engaging in fraudulent practices.

Scientists who suspected unethical behaviour have encountered, on average, 2.5 cases of fakery in the past decade.

Only 2 percent of those replying to the questionnaire said the incidence of fraud was declining. A total of 44 percent said the frequency of fraud had remained the same while 37 percent said it was on the rise.

The majority – 74 percent – believe media attention has tended to exaggerate the problem.

One person said that many cases, such as those involving poor statistics or the inappropriate use of mathematical algorithms, lie in a grey area between "unambiguously good science and unmistakable fraud".

The causes of scientific misbehaviour were given as the "rat race" to publish findings first, university reliance on quantitative measures of performance and competition for grants and recognition.

As one respondent said: "The universities and their priorities ('get the grant money') bear a lot of responsibility and are doing nothing to correct it."

Of those who said they suspected fraud, 27 percent said they did nothing about it. A further 37 percent said they spoke privately with the individual they suspected of wrongdoing, and 23 percent said they reviewed suspect data themselves.

Only 23 percent said they had reported their suspicions of their superior, while 20 percent went to the authorities in their own institution and 13 percent to authorities outside their institution.

A minuscule 2 percent said they had publicly challenged the suspect data.

Only a small percentage of those who suspect misconduct say the cases were actually resolved. This may be one reason why the researchers seemed to have little confidence in the universities' ability to investigate misconduct rigorously and take action against those found to have "crossed the line".

More than half – 54 percent – said universities were lax in their investigation of fraud and misconduct cases. A surprising 60 percent believe that a scientific team should share the blame if the work of one team member is found to be fraudulent.

Training Programmes in Production Engineering

The French Centre for Higher Education in the field of Mechanics – CESMECA (Centre d'Etudes Superieures sur 1'Enseignement de la Mecanique) proposes to organise within the framework of its cooperation programmes, and with the patronage of the French Ministry of External Affairs, two training programmes in English, specially designed for foreigners working in the mechanical engineering industry. They are: (1) Quality Management in Production Engineering; and (2) Maintenance in Production Engineering

These training programmes will be held at the French National Institute of Applied Science-INSA and would allow the participants to progressively acquire the knowledge necessary for implementing a quality activity within their company.

For further information interested candidates may contact directly : CESMECA, 8, avenue des Minimes, 94300 Vincennes, France.

Indira Gandhi National Open University

Schedule of Telecast for the period 1 June to 30 June
6.30 a.m. to 7.00 a.m

Date/Day	Academic Programme	Title of the Course
1.6.92 Monday	Bachelor's Degree Programme (BDP)	Sankramak Rog
3.6.92 Wednesday	Diploma in Rural Development	Towards a Greener World – Social Forestry & Wasteland
5.6.92 Friday	Management	Communication Process
8.6.92 Monday	Bachelor's Degree Programme (BDP)	Communication for Motivation through Leadership
10.6.92 Wednesday	Diploma in Rural Development	Yeh Jungle Hamare Hain
12.6.92 Friday	Management	Managerial Challenges in the 90's Pt. I
15.6.92 Monday	Bachelor's Degree Programme (BDP)	Netritva aur Protsahan Dwara Sampreshan
17.6.92 Wednesday	Distance Edn. (DE)	Assessment & Evaluation
19.6.92 Friday	Management	Managerial Challenges in the 90's Pt.II
22.6.92 Monday	Bachelor's Degree Programme(BDP)	Upanyas Pt.II
24.6.92 Wednesday	Creative Writing in English	Dramatisation of Ideas
26.6.92 Friday	Management	HRD-Practices in Select Organisations
29.6.92 Monday	Bachelor's Degree Programme(BDP)	Jean Piaget – Developmental Stages of a Child

COMMUNICATION

Making the System Work

To the questions posed by Dr.S.K.Verma about making the system work (*University News*, April 27) I would venture to hazard an answer, although I have only 33 years of experience as against his 41!

Even the pan-Indian linking force of a supersystem, that Dr. Verma so fondly cherishes, will not work in an atmosphere vitiated by "chaos, corruption, nepotism, favouritism, regionalism, casteism and groupism". Gasping for breath in the stranglehold of this plethora of vile things is the 'human factor' which is the life-force of any system.

It is the human factor that makes a system work, provided the setting is healthy. Under frequent and jarring impact of alien interests no system can work.

The human factor must draw its sustenance from an inalienable sense of character, integrity and responsibility, or else its gasping might be misconstrued as a failure of the system.

If we could muster a steady supply of men of calibre, vision and integrity, all systems would work at 100% efficiency and productivity.

It is not a technology or a systems crisis but a crisis of character that no 'power-propelled supersystems' would ever care to acknowledge.

I congratulate Dr. Verma on his bold presentation of the case, even if it appears to be a losing one at the moment. We must retain hope!

P.P. Dayal
Head of the Deptt. of English
Ranchi College
Ranchi

Student Community in the University System

M.R. Kurup's paper "Student Community in the University System" (*University News* Vol. XXX of April 6, 1992) is a real eye-opener for all those involved in the activity of higher education. The plain speaking is not without reasons. Kurup hits the nail on the head when he suggests that at the heart of the entire ailment is unscrupulous insincerity in all the concerned quarters. So comprehensive and so compendious a paper as this indeed needs to be made a compulsory reading for all concerned.

Shirish Chindhade
Principal, M.U. College
Pimpri-Pune : 411017
(Maharashtra)

Essence of Education

This refers to the 'Communication' from N.M. Munshi on "The Benedictory Address" (*University News* 24th February 1992) where he finds the ideology of sacrifice against the natural law of selfishness. Though I appreciate his frankness to admit the fact, I must point out that he has missed the very essence of education. The 'Inborn selfishness' and 'force of instinct' need to be guided, controlled, and moulded in such a way where one thinks of one's fellows being and this is the task education must perform. May I quote.

"Education does not mean to teach you, what you do not know but to teach you how to behave as you do not behave".

Purnima Mehta
Reader
Department of English
Bhavnagar University
Bhavnagar-364002.

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THESES OF THE MONTH

A list of Doctoral Theses accepted by Indian Universities.

HUMANITIES

Philosophy

1. Das, Paritosh Kumar. **The problem of foundation: Humeand Husserl.** Burdwan. Dr Gopal Chandra Khan, Prof, Department of Philosophy, University of Burdwan, Burdwan.

2. Dutta, Deepti. **Samkhya as presented in Devahuti: Kapila discourse and its development till Samkhya-Karika.** Delhi.

3. Satnam Kaur. **Faith, grace and prayer in Sikh religious thought: An analytic study.** Delhi.

Religion

1. Sekido, Norio. **A study of the Mahayana Buddhism with special reference to the Saddharma Pundarika Sutra and the Mahabharata Bhisma Parvan and Santi Parvan.** Delhi.

2. Sharma, Bhagat Ram. **The influence of Buddhism on the life of the people of Japan.** Delhi.

Fine Arts

Drawing & Painting

1. Hamdi, Taiesir. **An appreciation of oriental art with particular reference to Indian tradition, in regard to line and colour.** Rabindra Bharati.

Music

1. Gupta, Chitra. **Sangeet mein taal vadyon kee upyogita: Bharatiya sangeet ke sandarbh mein taal vadyon kee utpatti, vikas aur upyogita ka vivechanatmak adhyayan.** Meerut. Smt. Somlata Singh, (Retd), Department of Music, Raghunath Girls College, Meerut.

2. Mittal, Anjali. **Hindustani music and the aesthetic concept of form.** Delhi.

3. Mythili, R. **Ritual music in the temples of Madurai District.** Madurai.

Language & Literature

English

1. Jana, Suman. **Sylvia Plath: The artist and her art.** Burdwan. Dr Mohit Kumar Roy, Prof, Department of English, University of Burdwan, Burdwan.

2. Payom, Tubtimtong Phramaha. **The adolescent hero in J D Salinger.** Nagpur. Dr D G Deshmukh, Department of English, Nagpur University, Nagpur.

3. Raja, P. **Probing the psyche: The short stories of Manoj Das.** Madras.

4. Rajeswari, B. **Black feminst tradition in theatre - Alice Childress, Alexis de Veaux, Ntozake Shange, Elaine Jackson and P J Gibson.** Madurai.

5. Rath, Vanita. **A study of Virginia Woolf's critique of love and marriage.** Delhi.

6. Somalatha, Yerramilli. **Desolation of reality: A study of V S Naipaul's later novels.** Madras.

7. Suhithar Baus, G. **The neurotic world of F Scott Fitzgerald.** Kerala. Dr Jameela Begum, Reader, Institute of English, University of Kerala, Thiruvananthapuram.

8. Yadav, Manasvi. **Depiction of Sikh culture in Indo-English fiction.** Panjab.

Sanskrit

1. Chattopadhyay, Anupama. **Critical study on Anupalabdhi as a Pramana.** Rabindra Bharati.

2. Darshna Devi. **Isvara, jiva aur prakrti: Dayananda darshan ke visista sandarbha mein.** Punjabi. Prof Abhimanyu Malik, Department of Sanskrit, Punjabi University, Patiala.

3. Hari Ram. **Sri Manikantha krta Nyayaratnam ka samalochanatmaka adhyayana.** Delhi.

4. Ladhake, Pracheta Jyotirao. **Dhatu samya mein manobhavon ka sthan.** Nagpur. Pt. Shivkaran Sharma, Shri Ayurved Mahavidyalaya, Nagpur.

5. Merh, Kusum Pradeep. **Yama in Vedas and Puranas: A study.** Baroda.

6. Ramachandran, A. **The cultural history of Lower Krsna Valley and its contacts with South-East Asian Countries.** Rabindra Bharati.

7. Sharma, Preeti. **Abhiprayaprakasika: Ek adhyayan.** Delhi.

8. Urvi. **Yajurvediya Brahmnon ke pramukha akhayanon ka sameekshatmak adhyayan.** Delhi.

9. Venkata Gangadhara Ayyavaru Somayajulu, Durgavajjhala. **A study of the performance of Agnistomayaga according to Andhra tradition.** Andhra.

10. Yogi, Vandita Madhuhasini. **Vedic vangmaya mein prajapati.** Delhi.

Pali

1. Bodele, Malti Mansaram. **Bharatiya samajavar Boddh dharmacha prabhav.** Nagpur. Dr Bhagchandra Jain, Department of Pali and Prakrit, Nagpur University, Nagpur.

Punjabi

1. Gurm, Gurdev Kaur. **Guru Nanak dwara rachit Onkar bani da alochnatmak adhyayan.** Punjabi. Dr Balkar Singh, Reader and Head, Department of Religious Studies, Punjabi University, Patiala.

Hindi

1. Chandrahas Singh. **Hindi pragativadi kavya ke sandarbh mein Nagarjun aur Trilochan kee kavita ka vishesh adhyayan.** H S Gour. Dr Prem Shankar, B-16, Gour Nagar, University Campus, Sagar.

2. Choubey, Dinesh Kumar. **Ramayan-katha aur Saptakanda-Ramayan ka tulnatamak adhyayan.** Manipur. Dr K N Prusad 'Magudh', Prof, Department of Hindi, Manipur University, Imphal.

3. Dubey, Shrinarayan. **Adikaleen rasokavya mein aprastut yojana.** Burdwan. Dr Srinarain Pandey, Reader, Department of Hindi, University of Burdwan, Burdwan.

4. Durga, Vani. **Impact of Western philosophy on modern Hindi novels.** Andhra.

5. Hemalatha, T. **A comparative study of the poetry of Ajneya and Ayyappa Panicker.** Kerala. Dr S Thankamani Amma, Reader, Department of Hindi, Institute of Correspondence Courses, University of Kerala, Kariavattom.

6. Kulwinder Kaur. **Bhagwati Charan Verma ke upanyason mein manviya sambandhon ka badalta swaroop.** Punjabi. Dr Pushap Pal Singh, Reader, Department of Hindi, Punjabi University, Patiala.

7. Mahanta, Nirajana. **Magahi aur Assamiya lokgeeton ka tulnatmak adhyayan.** Manipur. Prof K N Prusad 'Magudh', Department of Hindi, Manipur University, Imphal.

8. Premaleela, Putrevu. **Aarigapudi ke upanyason mein kathya aur shilp.** Andhra.

9. Santosh Kumari. **Sathottari Hindi kahani parampara aur**

vidroh. Punjabi. Dr Chandar Shekhar, Reader, Department of Hindi, Punjabi University, Patiala.

10. Saxena, Veca. **Amritlal Nagar ke aupnyasik patron ka manovaigyanik adhyayan.** Awadhesh. Dr Ganga Prasad Gupta.

11. Shrivastava, Madhuri. **Dinkar ke kavya mein, vyakti, samaj aur rashtra.** Awadhesh. Dr Vinod Tewari.

12. Soni, Saroj. **Ramayan va Ramcharit Manas mein Ramrajya kee avadharna aur uski adhunik sandarbhta.** H S Gour. Dr Bhagirath Mishra, H-9, Padmakar Nagar, Sagar.

13. Srinivasa Shastry, P R. **Karnatak mein Hindi prachar kee gatividhiyan.** Bangalore. Prof Saragu Krishna Murthy, Department of Hindi, Bangalore University, Bangalore.

14. Subba Rao, P V L. **Hindi aur Telugu ke prasidh manovigyanik upanyaskar Jainendra Kumar aur Tripuraneni Gopichand ke aupnyasik patra: Manovigyanik vishleshan.** Andhra.

15. Vhora, Salimbhai Abdul Rehman. **Shailesh Matiyani ka katha sahitya.** Baroda.

Urdu

1. Ansari, Mohd Usman. **A critical study of distinguished Masnavi nigar of Deccan.** H S Gour. Dr M Shafie, Head, Department of Urdu and Persian, Seva Sadan Mahavidyalaya, Berhampur.

Oriya

1. Jena, Bhagirathi. **Rama Chandra Natyakruti: Eka anusilana.** Sambalpur. Prof S C Pradhan, Department of Oriya, Sambalpur University, Jyoti Vihar, Burla.

2. Rout, Právakar. **Chintamani Mahantynka kathakruti: Eka adhyayana.** Sambalpur. Prof S C Pradhan, Department of Oriya, Samabalpur University, Jyoti Vihar, Burla.

3. Tripathy, Kailas Chandra. **Kabi Mayadhara Mansingh: Ek sahityika anuseelana.** Berhampur. Dr Upendra Nayak, Reader, Department of Oriya, Khallikote College, Berhampur.

Gujarati

1. Dave, Chhaya Prahaladrao. **Kavi Snehrashmi: Ek adhyayan.** Bhavnagar. Dr J A Vyas, Lecturer, Department of Gujarati, Bhavnagar University, Bhavnagar.

Tamil

1. Anandakumar, P. **A comparative study of romanticism in Bharathi, Asan and Gurazada.** Madurai.

2. Arokiasamy, R. **Erubadam nootrandu kirithuva chitrilakhiangal: Oru aaivu.** Bharathidasan. Dr R Jayapal, Lecturer, Department of Tamil, Sri Pusham College, Poondi.

3. Moganarangan, G. **Thamizh kavidaigalill saudha amaippu vannasarabam dhandapani adigaler sirappaivu.** Madras.

4. Muthumaran, R. **Anna mavatta nattuppura paadalgal kattum makkal vazhviyal.** Madurai.

5. Ramanujam, K. **Vaishnava andachi elakhiangal.** Madurai.

6. Selvanganapathy, S. **Bharathidasanum carl sandburgum: Oru oppaivu.** Bharathidasan. Dr A Gopinath, Asstt Prof, Department of Tamil, Bishop Heber College, Tiruchy.

7. Sujatha, S. **A lexical study of Christian Nadar Dialect of Kanyakumari District.** Kerala. Dr K Nachimuthu, Prof, Department of Tamil, University of Kerala, Kariavattom.

8. Yesudhas, D. **Evalution of unknown Christian literature in Tamil.** Kerala. Prof Subramoney K, Head, Department of Tamil, University of Kerala, Kariavattom.

Malayalam

1. Jacob, Annamma. **Social reflection in Thakazhy's novels.** Mahatma Gandhi. Prof C D Samuel, Department of Malayalam, Catholicate College, Pathanamthitta.

Telugu

1. Sharma, K K V. **Patriotic poetry in the post independance Telugu literature.** Bangalore. Dr T V Subba Rao, Chairman, Department of Telugu, Bangalore University, Bangalore.

Geography

1. Khalatkar, Shubhangi Manchar. **Natural resources and planning in the Wardha Valley of Maharashtra.** Nagpur. Prof K T Kolte, Vasantrao Naik Institute of Arts and Social Science, Nagpur.

2. Singh, Brijendra Pratap. **Sidhi Jile kee arth vyavastha mein grameen vidhyutikaran ka prabhav.** Awadhesh. Dr Sumant Singh.

3. Singh, Chandra Dip. **Population problem in North-Eastern Bihar.** Bihar. Dr Rama Nand Singh, Prof, Department of Geography, Bihar University, Muzaffarpur.

4. Tahir Hussain. **A spacio-temporal analysis of occupational structure of agricultural workers in Haryana with special reference to Mewat, 1961-81.** Jamia. Prof Qazi Mohd Ahmad, Deparmtent of Geography, Jamia Millia Islamia, New Delhi and Dr M Feroj, Department of Geography, Jamia Millia Islamia, New Delhi.

History

1. Ahmed, Roohi Abida. **Foreign relations of Delhi Sultanate.** AMU. Prof K A Nizami.

2. Bhattacharji, Debabrata. **Samakaleen Bangalir dristite Soviet Russia, 1917-1947.** Rabindra Bharati.

3. Chinnappan, S. **Histographical analysis of K A Nilakanta Sastri's writings on history.** Manipur. Dr L B Varma, Prof, Department of History, Manipur University, Imphal.

4. Choudhary, Manju. **The role of women in the freedom movement in the Panjab, 1919-1947.** Panjab.

5. Gajendra Reddy, K. **Non-cooperation movement in Andhra, 1920- 22.** Venkateswara. Dr P Raghunadha Rao, Prof (Retd), Department of History, Sri Venkateswara University College, Tirupati.

6. Gupta, Kunj. **Women in the Yajnavalkyasmrti and the Mitaksara.** Delhi.

7. Kaliamurthy, G. **Establishment of British influence in Mysore, 1760-1800 A D.** Madurai.

8. Manjeshwar, Surendra. **Studies in the military history of Karnataka from the earliest to the 14th century.** Karnatak. Dr S H Ritti, Prof (Retd), Department of Ancient Indian History and Epigraphy, Karnatak University, Dharwad.

9. Rajappan, N. **Aramboly through the ages.** Madurai.

10. Sasisekaran, B. **Saiva iconography in Kanchipuram Temples.** Madras.

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__________ **Plant Sciences: Report of the curriculum development centre.** New Delhi, Author, 1991. 173p.

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UNIVERSITY OF DELHI

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Dated : May 12,1992

Applications, on the prescribed form,are invited for the following posts which had earlier been advertised vide our advertisement No. 126 dated 15/01/1991. The applications must reach the Registrar,University of Delhi, latest by **June 11,1992.** Persons who have already applied in response to the advertisement No. 126 need not apply again. They may, however, supply additional information,if any:-

Professors : Buddhist Studies(1); Sociology(2); Zoology(1);

Readers : Arabic(2); Buddhist Studies (2); Linguistics(1)*; Commerce (2); Geology (2); Hindi(1); Law (CLC) (1); Germanic & Romance Studies (2)+; Music (3)@; Philosophy (4)$; Punjabi(1);

Lecturers : Botany (1) ; Buddhist Studies (2) ; Chinese & Japanese Studies (2) ; Education (Civics) (1) ; Library & Information Science (1) ; Germanic & Romance Studies (1)** ; Philosophy (1)***; Operational Research (1) ;

Research Associates : Chemistry (1) ; Chinese & Japanese Studies (2) ; Physics & Astro-Physics (1) ; Urdu (1) ; Zoology (2)

* Presently upto 31/03/93 but likely to continue

+ One each in Italian & Spanish

@ One each in Hindustani Vocal Music, Karnatak Vocal Music and Hindustani Instrumental Music

$ One post for Dharmashastra

** Spanish

*** Temporary upto 15/07/1993

The details regarding prescribed qualifications and application forms for various posts can be had from Establishment Section-IV (Room No. 205), New Administrative Block, University of Delhi, Delhi-110 007, either personally or by sending a self addressed envelope (size 13cm x 28 cm) with postage stamp worth Rs. 8/-.

PROF. S.K. WASAN
REGISTRAR

DR AMBEDKAR OVERSEAS FELLOWSHIPS FOR POST GRADUATE STUDY – 1992-93

Applications are invited from Indian Citizens for award of 4 fellowships for study abroad under the scheme of Dr Ambedkar overseas Fellowship for Post-Graduate study in the following discipline:

(i) Law and Constitutional Studies

(ii) Economics

(iii) Sociology

(iv) International relations

The fellowship will be available for Master Degree, Post-Graduate studies leading to PhD and Post Doctoral research in the prescribed subjects. Two fellowships will be available for Master Degree and two will be available for Doctoral or post Doctoral research.

VALUE OF FELLOWSHIPS: Rates of Fellowships will be as follows subject to such modifications as the Government may decide from time to time : (a) A maintenance of US $8400 including accommodation) per annum. (b) Contingency allowance of US$1200 per annum which includes cost of local travels, incidental expenses, books stationery and other expenses. (c) Tuition, examination fees and other compulsory charges payable to the University or College. (d) Cost of Air Fare (both ways) Economy Class and Airport Tax from the nearest Airport will be met in full. (e) First Class Railway Fare from the candidate' place of residence to the port of embarkment and back.

N.B.: The candidates are not allowed to seek employment during the course of their study/research without the permission of the Government of India.

DURATION OF FELLOWSHIPS: i. 2 years for Master's Degree. ii. 3 years for Post Graduate studies leading PhD iii. Upto 1 year for Post-Doctoral research.

MINIMUM QUALIFICATIONS REQUIRED: (a) For master's course a First Class Bachelor's Degree. (b) For Doctoral research a First Class Master's Degree with at least 2 years research or training experience after obtaining Master's Degree or M Phil Degree. (c) For Post-Doctoral research course candidates should have a First Class Master's Degree followed by a Doctoral Degree in the subject and engaged in research/teaching/industry.

NOTE I: Where no Division/Class is awarded at the Bachelor's/Master's Degree level, 60 per cent marks and above will be taken as equivalent to a First Class. The experience will be taken upto the last date, prescribed for submitting the completed application forms to this Ministry. The Degree of MPhil/PhD etc should be completed in all respects upto this date. In support of the experience, whether it is working, teaching or research, documentary evidence duly signed by the competent authority must be attached with the application form.

NOTE II: Candidate must have uniformly outstanding academic records. Selection, however, will not be based barely on academic attainments. Due weightage will be given to candidates who are all-rounders with evident qualities of intellect, character and personality. Candidates possessing creative, innovative ability or artistic talents, sportsmen, community service and other cultural activists will be suitably rewarded the assessment.

NOTE III: Candidate whose Bachelor's Degree results are awaited at the time of application may also be considered but actual award of fellowship will be made after the results are available.

AGE: (i) for Master's Degree candidate should not be more than 25 years as on 1st October of the year of award of fellowships.(ii) For Doctoral Research candidate should not be more than 30 years on 1st october of the year of award of fellowships. (iii) For Post-Doctoral research candidate should not be more than 35 years as on 1st October of the year of award of Fellowships.

N B: Relaxation in age upto 3 years to SC/ST candidates.

LAST DATE: Applications in the prescribed format together with relevant documents should reach the following address latest by **8th June, 1992. Member Secretary, Dr Ambedkar Foundation, 25, Ashoka Road, new Delhi 110001.** Applications received incomplete or after the last date will not be entertained.

GENERAL INSTRUCTIONS: (i) The application should be made in the prescribed format in duplicate (format given below). (ii) A candidate may apply for only one subject of choice,. (iii) Mere fulfilment of requirements as laid down in the advertisement does not qualify a candidate for interview. Interview letters in a particular subject will be sent only to a limited number of candidates after their applications are examined by a Selection Committee. (iv) Applications must be accompanied by attested copies of all the certificates, diplomas, degrees, marks sheet in respect of all the examinations passed alongwith cast certificate in respect of Scheduled Caste and Scheduled Tribes candidates, and one copy of recently taken passport size photograph with signature (to be pasted on the application form). (v) Equivalent foreign degrees and diplomas are acceptable. (vi) Candidates who have already been abroad for studies/training/specialization either on scholarship or on their own, for a period exceeding six months are eligible to apply if they have been in India for at least 3 consecutive years after returning from abroad. (vii) In the case of candidates qualifying from Universities/Institutions which do not give class or Division, requirements in lieu of 1st Class would be 60% marks and where grades are awarded, the candidates are required to furnish exact percentage of marks and indicate the conversion formula. (viii) The candidates who are employed must apply through their employers. (ix) Candidates belonging to SC/ST community must attach a copy of certificate from the competent authority i.e. first class magistrate (S.D.O. District Magistrate/Collector). (x) While indicating the period of past stay abroad, candidates should mention the specific dates. (xi) Applications in subject-fields other than those specified in the advertisement will not be considered. (xii) Candidates who do not possess the requisite qualifications need not apply. (xiii) The candidate will submit a typed statement as to proposed course of study, general interests and activities (including sports) and the character of the work at which the candidate aims in later life. This statement should not exceed 1,000 words in length and should be written in as simple and direct manner as possible. (xiv) Incomplete applications and applications received late after the stipulated date will not be considered and no correspondence in this regard will be entertained. (xv) Documents submitted alongwith the application will not be returned. Hence, candidates are advised to send only photo copies of the certificates etc. (xvi) Canvassing in any form will disqualify a candidate. (xvii) The Selection Committee's decision about calling a candidate for interview or selecting a candidate for nomination will be final.

NO REPRESENTATIONS IN THIS REGARD WILL BE ENTERTAINED.

Selection of the candidates for award of scholarship will not guarantee his/her admission in the institution abroad. The selected candidates will have to make efforts for admission in the institutions of his/her choice. Foundation will, however, assist, at his/her request in placement in any institution.

NOTE: (BEFORE FILLING UP THE APPLICATION, CANDIDATES ARE ADVISED TO GO THROUGH THE INSTRUCTIONS CAREFULLY).

PROFORMA FOR APPLICATION

1. Name of the Scheme

2. Subject

3. i) Name of the candidate : Shri/Smt/Km

(in block letters),

with full mailing address

ii) Marital Status

Recent passport
size photograph
without photograph
the application
will be considered
incompleted.

4. Date of birth and the State to which the candidate belongs

5. Whether a member of SC/ST, if so, give full particulars (enclose certificate duly signed by 1st Class Megistrate).

6. Academic record starting from High School/Higher Secondary (Attested/Photostat copies of Certificates to be attached).

Name of the University/Board/ Institution	Examinations Passed	Year of passing	Division/ Class with position, if any*	%age of marks obtained and position if any	Subjects taken

*(In case no division/class is awarded and only grading is done the conversion formula adopted may be mentioned to determine the marks secured).

7. (a) Any special interest in extra-curricular activities such as Physical Education, Sports, Community Service and/or Cultural activities.

(b) Describe and attach certificates or other documentation, if any, in the following fields
(i) Sports
(ii) Community Service
(iii) Literary or artistic work and awards, if any, for it.
(iv) Debating
(v) Performing arts
(vi) Others

8. Nature of the present employment with date of appointment designation and the name & address of the employer.

9 Have you been abroad? if so, give full particulars of the country and the period. Also mention the year of return to India.

10. Personal statement:

(A typed statement not exceeding 1,000 words indicating proposed course of study, general interest and activities (including sports) and the character of the work at which the candidate aims in later life, to be attached with the application).

Signature of the Candidate

PLACE
DATE

DR AMBEDKAR FOUNDATION
(MINISTRY OF WELFARE) (GOVERNMENT OF INDIA)

davp 92/63

NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING

Applications are invited for the posts of Professors and Readers in the NCERT including its Regional Colleges of Education located at Ajmer, Bhopal, Bhubaneswar and Mysore and offices of Field Advisers in States, NCERT follows recruitment qualifications prescribed for similar posts in the Central Universities, Broadly these are:

1. PROFESSOR: An eminent scholar with published work of high quality actively engaged in research. About 10 years experience of teaching and/or research, experience of guiding research at doctoral level. OR An outstanding scholar with established reputation who has made significant contribution to knowledge.

2. READER: A good academic record with a doctoral degree/or equivalent published work. The evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials. About 5 years experience of teaching or research provided that at least 3 of these years were as Lecturer or in an equivalent position. This condition may be relaxed in the case of candidates with outstanding record of teaching/research.

Professors: None: Three in Education, 2 each in physics and Chemistry and one each in Botany and English.
Reader: Seventeen: 8 in Education, 2 each in Zoology, English Mathematics, Chemistry and one in Botany.

Scale of Pay: Professors Rs.4500-150-5700-200-7300.
Readers: Rs.3700-125-4950-150-5700.

NOTE: (a) There is no age limit for the employees of the Council. Age concessions allowed for SC/ST candidates, displaced persons and Ex-servicemen as per Govt. of India instructions. (b) The number of vacancies in each subject is tentative and liable to change. (c) All employees of the Council can be transferred to any of the establishments of the Council, anywhere in India. (d) If a candidate is found to be of exceptional merit, relaxation of qualifications, experience and age etc., may be given by the Selection Committee at its discretion. (e) The prescribed qualifications are minimum and mere possession of the same does not entitle candidates to be called for interview. When the number of applications received in response to the advertisement is large. It will not be possible or convenient for the Council to all the interview all these candidates. The Council may then restrict the number of candidates for interview to a reasonable limit on the basis of qualifications and experience higher than the minimum prescribed in the advertisement. (f) 25% of the posts are earmarked for being filled up by deputation/contract for a period of two to three years from school system in the States viz. SCERTs/SIEs, teacher training institutes, Universities with Departments of Education etc. provided they fulfil the prescribed qualifications. (g) The NCERT deals in curriculum Development, Teachers' Training Research and Developmental work in the area of curriculum, instructional material in school subject etc. The candidates conversant with such subjects may be preferred. (h) Those who had applied earlier for any of these posts may kindly send their upto date bio-data for addition to the application.

Prescribed application form can be obtained from the address given below enclosing an unstamped envelope (28 cms x 12 cms) giving name of the post, serial number and advertisement number. The outer cover should be marked 'Request for application form' Separate application should be submitted for each post.

Those employed in Govt./Semi-Govt./Autonomous Organisations should send their applications through proper channel.

Completed application form along with attested copies of certificates of qualifications and experience etc., and a crossed Indian Postal Order for Rs.8/- (No fee for SC/ST candidates) in favour of Secretary, NCERT **should reach him by 15.6.1992.**

Applications received without prescribed fee and/or received after the closing date will not be entertained. (Advt. No.130).

SECRETARY
National Council of Educational Research and Training,
Sri Aurobindo Marg
New Delhi-110016

davp 780(6)92

CLASSIFIED ADVERTISEMENTS

UNIVERSITY OF MADRAS
NOTIFICATION

Applications are invited for admission to the following Postgraduate Courses in the University Departments for the academic year 1992-93:

1. M.A DEGREE COURSES
[A] CHEPAUK CAMPUS

1-A : History*
II-D : Public Management
III-C : Economics [Econometrics]
III-D : Economics [Indian Economics]
V-B : Indian Philosophy
V-C : Saiva Siddhantha
VI-E : Applied Psychology and Psychological Services
VII : English
VII : French
VIII : Indian Music
IX : Ancient History & Archaeology
XIII : Sociology
XIV : Anthropology
XVI : Defence & Strategic Studies
XVII : Andragogy
M.A : Work Education
M.A : Communication
M.A. : Criminology*
M.A : Jainology
M.A : Vishnavism
M.A : Public affairs

[B] MARINA CAMPUS

VII : Urdu
Persian
Hindi
Kannada
Malayalam
Telugu [special]
VII-A : Sanskrit
Tamil Literature & Culture
VII-B : Tamil [Special]

CHEPAUK CAMPUS

2. M.Com [Business system]
3. M.L.I.S [Master of Library & Information Science] – 2-year course
4. M.SC. DEGREE COURSE

[A] CHEPAUK CAMPUS

I-A : Mathematics
II-A : Statistics [Sem.System]
VIII-A : Applied Geography [Sem.System]

[B] GUINDY CAMPUS

III-A : Biophysics
III-C : Physics [Sem.Credit System]*
[a] Theoretical Physics
[b] Nuclear Physics
IV-B : Analytical Chemistry [Sem. Credit System]
IV-C : Physical Chemistry* [Sem.Credit System]
IV-D : Organic Chemistry [Sem. Credit System]
IV-E : Inorganic Chemistry [Sem. Credit System]
IV-G : Environmental Chemistry
VI-C : Zoology [Special] [Sem. Credit System]
VII-A : Applied Geology
VII-C : Geology
X : Biochemistry
M.Sc : Plant Science

[C] TARAMANI CAMPUS

M.Sc : Br. X : Biochemistry
M.Sc : Environmental Toxicology*
M.Sc : Biomedical Genetics
M.Sc : Microbiology* [Faculty of Medicine – 3 years]
M.Sc : Anatomy* [Faculty of Medicine – 3 years]
M.Sc : Physiology [Faculty of Medicine – 3 years]

* conducted on an inter-disciplinary basis.

Application form together with the prospectus can be had from the Registrar, University of Madras, Madras-600005, from 20th May 1992, on written requisition, with a demand draft for Rs.50/- drawn in favour of the Registrar, University of Madras, either in person or by post enclosing a self-addressed envelope (size 28x13 cms) stamped for Rs 5/- towards ordinary postage and also the form obtained from Post Office for certificate of Posting and affixing the stamp for Rs.2/- or Rs.10/- towards Registered Post charges. POSTAL ORDERS AND MONEY ORDERS ARE NOT ACCEPTED.

The last date for issue and for submission of filled-in application is **26-06-92.**

Filled-in application, one for each course should be sent directly to the Head of the University Department concerned, before the expiry of the last date prescribed and not to the Registrar, University of Madras.

The University reserves the right to start or suspend the conduct of any of the above courses, if the circumstances so warrant.

Dr. P. Govindarajulu, Ph.D.
REGISTRAR

MAR ATHANASIUS COLLEGE ASSOCIATION
KOTHAMANGALAM
KERALA STATE
Pin 686666, South India.
WANTED

Lecturer in Political Science and Physics (Open and Community Quota respectively) for Mar Athanasius College, Kothamangalam. The posts are subject to sanction by the Mahatma Gandhi University, Kottayam, and review under the U.G.C. Scheme.

Qualification

1st or 2nd class Master's degree in the concerned subject with not less than 55% marks and a pass in the U.G.C eligibility test for JRF/Lecturership or candidates who have been awarded M.Phil upto Dec. 1990 and Ph.D. till date.

Age: According to Government service and University regulations.

Apply to the Secretary within one month from the date of publication of this notification. Application form and other details can be had from the Secretary, Mar Athanasius College Association, Kothamangalam, on payment of Rs.50/-in person or Rs.60/- by D.D. or M.O.

SECRETARY

ROSARY COLLEGE OF COMMERCE AND ARTS
NAVELIM SALCETE GOA 403707

Applications are invited for the following posts:

1. Lecturer in Commerce and Accounts – 2 posts (full time), 1 post (lecture basis)
2. Lecturer in Maths and Statistics – 1 post (full time)
3. Lecturer in Commercial Geography – 1 post (full time)
4. Lecturer in Economics – 1 post (full time)
5. Lecturer in English – 2 posts (full time)
6. Lecturer in Business Law – 1 post (lecture Basis)
7. Lecturer in Konkani – 1 post (full time)
8. Lecturer in Hindi – 1 post (lecture basis)
9. Lecturer in Portuguese – 1 post (part time)
10. Lecturer in Psychology – 1 post (full time)
11. Lecturer in History – 1 post (full time)
12. Lecturer in Sociology – 1 post (part time)
13. Lecturer in Tourism and Hotelry – 1 post (lecture basis)
14. Librarian – 1 post (full time)
15. Director of Physical Education – 1 post (full time)

Eligibility: Master's degree in the relevant subject with at least 55% marks or its equivalent grade and good academic record (i.e. atleast 50% at the graduation examination or an average of 50% marks at the three examinations in SSC, HSSC, and graduation taken together).

Candidates should have cleared the eligibility test for lecturership. In case candidates having passed eligibility test are not available, candidates fulfilling other conditions would be appointed on temporary basis.

Scale of Pay: Rs. 2200-75-2800-100-4000 and other admissible allowances. Persons who are already employed shall send their applications through proper channel.

Certified copies of statement of marks at all public examinations should be enclosed.

The number of vacancies may change depending on the workload. The right not to full up any of the abovementioned posts is reserved.

Applications with relevant details should reach the Secretary, Diocesan Society of Education, Rosary College, Navelim, Goa 403707, within 15 days.

Newman Fernandes
PRINCIPAL

PONDICHERRY UNIVERSITY
Administrative Complex,
R. Venkataraman Nagar
Kalapet, Pondicherry 605 014

APPLICATIONS INVITED FOR THE FOLLOWING FACULTY POSITIONS:

I. ONE POST OF READER IN THE DEPARTMENT OF ECONOMICS

Qualifications & Experience:

(i) Good academic record with a doctoral degree or equivalent published work. Candidates from outside the University system in addition also possess atleast 55% marks or an equivalent grade at the Master's degree level.

(ii) Eight years experience of teaching/or research including upto 3 years for research degrees and had made some mark in the areas of scholarship as evidenced by quality of publications, contribution to educational renovation, design of new courses and curricula.

Field of specialization required:

(a) Agricultural Economics
(b) Applied Statistics
(c) Environment or Energy Economics
(d) Economics of Education and
(e) Industrial Economics

Scale of Pay: Rs.3700-125-4950-150-5700.

Age: Not exceeding 45 years (Relaxable by 5 years in the case of SC/ST candidates)

II. (A) ONE POST OF MANAGER/HEAD OF COMPUTER CENTRE

Qualification & Experience:

(i) A consistently good academic record with a Ph.D degree in Computer Science/Computer Engineering or Ph.D in a relevant area with a Diploma in Computer applications.

(OR)

M.Tech/M.E in Computer Science/Computer Engineering

(ii) A minimum experience of 5 years for Ph.D holders and 7 years for M.Tech/M.E. holders in teaching/research Laboratory work/ industrial work, at Lecturer's or equivalent level in University/ Engineering Colleges/National Institutes

(iii) A minimum of 3 years of experience in a suspervisory capacity in maintenance of a Computer Centre in an organisation of repute.

(iv) Organisational ability for co-ordination and managing various services of the Computer System.

(v) Experience in conducting short-term training programme in Computer Applications.

Desirable: Qualification in Management (Business Administration)

Area of Specialisation: System Analysis & Design/Management Information Systems.

Age: Not exceeding 45 years (Relaxable by 5 years in the case of SC/ST candidates)

Scale of Pay: Rs.3700-125-4950-150-5700

(B) ONE POST OF SYSTEMS ANALYST/ SYSTEMS PROGRAMMER

Qualification & Experience:

(i) A consistently good academic record with a Ph.D degree in Computer Science/ Computer Engineering or a Ph.D degree in a relevant area with a diploma in Computer Applications.

(OR)

M.Tech/M.E. with atleast 55% marks in Computer Science/Computer Engineering.

(ii) A minimum experience of 1 year for Ph.D holders and 2 years for M.Tech/M.E. holders in an organisations of repute.

Area of specialization: Systems Analysis & Design/Programming Languages/Computer Architecture.

Age: Not exceeding 40 years (Relaxable by 5 years in case of SC/ST candidates)

Scale of Pay: Rs.2200-75-2800-100-4000.

(C) TWO POSTS OF COMPUTER OPERATOR :

Qualification & Experience:

(i) B.Tech/B.E./M.Sc./M.C.A. with atleast 55% marks in Computer Science/Computer Engineering/Computer Applications.

(ii) A minimum experience of one year.

Area of specialization: Programming Languages/Utility Softwares/ Statistical packages.

Age: Not exceeding 35 years (Relaxable by 5 years in case of SC/ST candidates)

Scale of Pay: Rs.1640-60-2600-EB-75-2900.

(D) ONE TEMPORARY POST OF TRAINEE PROGRAMMER FOR A PERIOD OF ONE YEAR:

Qualification: M.C.A./M.Sc. Computer Science

Age: Not exceeding 30 years (Relaxable by 5 years in case of SC/ST candidates)

Scale of Pay: Rs.1200/- p.m. (Consolidated)

(E) ONE TEMPORARY POST OF TRAINEE OPERATOR FOR A PERIOD OF ONE YEAR:

Qualification: B.Sc Computer Science/ P.G.D.C.A.

Age: Not exceeding 30 years (Relaxable by 5 years in case of SC/ST candidates)

Scale of Pay: Rs.800/- p.m. (consolidated)

NOTE:

1. The University reserves the right to shortlist the applications as per the academic requirements of the University.

2. The University reserves the right to consider persons of exceptional merit who may not have formally applied.

3. Deserving Candidates may be considered for a higher start by sanctioning a maximum of 5 advance increments.

HOW TO APPLY:

Candidates may apply to the Registrar of the University (by designation only) for application from and prospectus alongwith a Demand Draft for Rs.50/- (Rs. Fifty only) towards Registration/Stationery fee, drawn in favour of the "Finance Officer, Pondicherry University, Pondicherry" payable at Pondicherry alongwith a self-addressed envelope (size 28 cm x 12 cm) stamped to the value of Rs.3/-. The SC/ST and visually handicapped candidates are exempted from payment of fees on production of relevant certificate.

Last date for receipt of filled in applications for all the posts is **30.06.1992.**

B.V.Selvaraj, IAS
REGISTRAR

A.I.U. PUBLICATIONS

		Rs.
1.	Universities Handbook	1000.00
2.	Equivalence of Foreign Degrees	180.00
3.	Handbook of Engineering Education	In Progress
4.	Handbook of Medical Education-1990	50.00
5.	Handbook of Management Education-1989	30.00
6.	Handbook of Agricultural Education-1986	40.00
7.	Handbook of Distance Education	In Progress
8.	Scholarships for Study Abroad and at Home	10.00
9.	Directory of Distance Education Institutions – Part I: India	225.00
10.	Directory of Distance Education Insitutions – Part II : Pakistan & Srilanka	
11.	Association of Indian Universities-1925-75	50.00
12.	Association of Indian Universities-1925-85	100.00
13.	New Technologies in Higher Education (HB)	120.00
	(PB)	80.00
14.	Decentralisation of Higher Education System	100.00
15.	Graduate Unemployment in India	150.00
16.	Higher Education in India: Retrospect and Prospect	250.00
17.	Studies in Distance Education	20.00
18.	Directory of Women's Studies in India	120.00
19.	Universities and Research	45.00
20.	University Finance - A Statistical Profile II	75.00
21.	State Funding of Universities	50.00
22.	Elite in the Making	40.00
23.	Economics of College Education – A Study of Hindu College, Delhi	25.00
24.	Educational Statistics at a Glance	75.00
25.	Education and Economic Development	23.00
26.	Report of the Task Force on Autonomous Colleges and Departments	60.00

BIBLIOGRAPHY OF DOCTORAL DISSERTATIONS

27.	Social Sciences	1857-1970	50.00
28.	Humanities	1857-1970	100.00
29.	Physical Sciences	1857-1970	125.00
30.	Biological Sciences	1857-1970	100.00
31.	Physical Sciences-1970-75		120.00
32.	Biological Sciences-1970-75		120.00
33.	Social Sciences & Humanities -1975-76		50.00
34.	Natural & Applied Sciences -1975-76		90.00
35.	Natural & Applied Sciences-1976-77		120.00
36.	Natural & Applied Sciences-1977-78		100.00
37.	Natural & Applied Sciences-1978-79		125.00
38.	Natural & Applied Sciences-1979-80		130.00
39.	Social Sciences & Humanities-1980-81		120.00
40.	Natural & Applied Sciences-1980-81		180.00
41.	Social Sciences & Humanities-1981-82		150.00
42.	Natural & Applied Sciences-1981-82		225.00
43.	Social Sciences & Humanities-1982-83		160.00
44.	Natural & Applied Sciences-1982-83		250.00
45.	Social Sciences & Humanities-1983-84		180.00
46.	Natural & Applied Sciences-1983-84		320.00
47.	Social Sciences & Humanities-1984-85		200.00
48.	Natural & Applied Sciences-1984-85		320.00
49.	Social Sciences & Humanities-1985-86		200.00
50.	Natural & Applied Sciences-1985-86		320.00
51.	Social Sciences & Humanities-1986-87		245.00
52.	Natural & Applied Sciences-1986-87		325.00
53.	Social Sciences & Humanities – 1987-88		340.00
54.	Natural & Applied Sciences – 1987-88		In Press

ON EXAMINATIONS

55.	Unfair Means in University Examinations-A Study	50.00
56.	Computer in Examinations (Why & How)	65.00
57.	Scaling Techniques : What, Why & How	75.00
58.	Conduct of Examinations	35.00
59.	Towards Better Questions	30.00
60.	Monograph on Grading	15.00
61.	Monograph on Question Banking	14.00
62.	Monograph on Internal Assessment	10.00
63.	Monograph on Test & Item Analysis	17.00
64.	Monograph on Question Banking in English Language & Literature	10.00
65.	Monograph on Practical Examinations	30.00
66.	Monograph on Semester System	20.00
67.	Research Abstracts-Part I, II & III Each	6.00
68.	Research Abstracts-Part IV	14.00
69.	Monograph on Sample Free Item Analysis	50.00
70.	Monograph on Moderation of Examination Results	8.00
71.	Monograph on Syllabus Analysis and Restructuring	10.00
72.	Monograph on Revaluation of Answer Scripts	12.00
73.	Assessing Non Scholastic Aspects of Learners Behaviour	14.00

STATUS REPORTS ON

74.	Grading in Universities	35.00
75.	Question Banking in Universities	25.00
76.	Internal Assessment in Universities	30.00
77.	Internal Management in Universities	30.00
78.	Preparations made by Universities to Receive 10+2 Input	30.00

QUESTION BANK BOOK SERIES

Undergraduate Level (English Script)

79.	Mathematics	120.00
80.	Physics	In Press
81.	Chemistry	136.00
82.	Zoology	50.00
83.	Botany	75.00
84.	History	45.00
85.	Geography	In Press
86.	Psychology	55.00
87.	Economics	75.00
88.	Commerce	45.00
89.	Political Science	60.00
90.	Foods & Nutrition	25.00
91.	Sociology	In Press
92.	English Language & Literature	30.00
93.	Physiology	45.00
94.	Pharmacology	In Press
95.	Automobile Engineering	35.00
96.	Law of Contracts	45.00
97.	Anatomy	60.00
98.	Constitutional Law	35.00
99.	Electrical Power System	75.00
100.	Agronomy	100.00
101.	Zoology (Hindi Script)	100.00
102.	Chemistry (Hindi Script)	160.00
103.	History (Hindi Script)	70.00

Postgraduate Level

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IGNOU

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  c) Not to fill up any of the vacancies advertised.

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ISM CONVOCATION

Prof. C.S. Jha, Vice-Chancellor, Banaras Hindu University, who delivered the convocation address, conferring the Degree of D.Sc. (*Honoris Causa*) on Shri Ashok Nath Banerjee, a doyen of Indian mining industry.

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Editor :
SUTINDER SINGH

THE UNIVERSITY AND THE STATE

University Autonomy in Theory and Practice

G.B.K. Hooja*

Delivering the presidential address at the 30th Annual Meeting of the Inter-University Board at Patna (1955), Dr. Zakir Hussain said,

> "The first thing, that has been disturbing me is the anxiety about what is commonly known as the autonomy of the universities. Whatever the legal fiction, the universities in India, during the period of foreign rule, had not been autonomous is any real sense of the word. That was one of the chief reasons, in my view, why they did not grow into as vigorous and as significant centres of the nation's intellectual and moral life as one could well wish. This has to be changed in a free India if the universities are to play their rightful role in the growth and development, the enrichment and purification of national life. Freedom is the life-breath of intellectual and moral life of which the universities must be the cherished centres. On the scrupulous preservation of academic freedom depends the strength and vitality of the universities as transmitters of culture, as critical appraisers of culture, as places extending the boundaries of knowledge, as the headquarters of the nation's general-staff of forces assigned for the advance across the frontiers of ignorance and prejudice and superstition, and as places for the formation of character and the building up of free moral personalities from generation to generation. In the din of political party clash, the guarantee of academic freedom becomes crucial. The problem becomes more acute with the growing financial needs of university education and their growing dependence in that behalf on the State. The wisdom of our generation is on test in our country for devising methods of liberal financial assistance by the State without any desire to influence or control the working of the universities. It presupposes a clear vision of the nature and significance of the work of the universities and it presupposes a considerable degree of self-restraint or modesty, perhaps, in people with power – a difficult but not impossible presupposition......
>
> The concept of the right of academic freedom, I wish to state expressly and hope fervently, should not be confined to the right to advance knowledge in a particular area of scholarship without external interference, it should also include, if university men are not to be doomed to become partial fragmentary existences, freedom of thought and expression even on issues outside their particular areas of conventional specialisation....the only limitations and restraint on it should be those of decency and decorum and those of social responsibility....
>
> While on this point of social responsibility of university men, I may be permitted to say a word about the possibility of our universities getting out with their beneficent work from their sheltered cloisters into the open world around. The open world in India, Burma and Ceylon is wide and is sadly neglected by the intellectual elite of these countries. Universities seem to be too preoccupied with their narrowly conceived work. The countryside is almost foreign land to the universities.... The work of Land Grant Colleges in the United States..... has transformed

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**Former Vice-Chancellor, Gurukula Kangri Vishwavidyalaya, and Rajasthan Agricultural University.*

> the rural life of America.... the Indian universities may well be encouraged to take up work of a similar nature... It is true that the university should be comparatively a place of 'shelter to grow ripe' and of 'leisure to grow wise', but it cannot afford to forget that the true value of knowledge comes out only when it functions and only when its use is harnessed to the service of some higher values does it reveal its true significance and exercise its liberating mission. 'Knowledge is idle if it becomes the private possession of an esoteric coterie. Knowledge has redeeming and life-giving power only when it continually re-enters the life and work of the community'. We should do something to make our seats of learning temples of such redeeming and life-giving knowledge".

Now that the question of University Autonomy has surfaced once again in the wake of the proposed bill to amend the U.G.C. Act, the academic community would do well to ponder over the nature and balanced advice of a seasoned and committed educationist as given above. Similar sentiments were expressed by the Gajendragadkar Committee too, which was appointed by the UGC on the recommendation of the Vice-Chancellors' conference, under the chairmanship of Justice P.B. Gajendragadkar, the then Vice-Chancellor, Bombay University, to consider specific issues relating to governance of universities. It said in its report (1971):

> "The concept of university autonomy......is not a 'legal' concept, not even a 'constitutional' concept. It is an ethical concept and an academic concept. This concept does not question that, in a democratic society like ours, legislatures are ultimately sovereign, and have a right to discuss and determine the questions of policy relating to education, including higher education....The concept of University Autonomy, however, means that it would be appropriate on the part of democratic legislatures not to interfere with the administration of university life, both academic and non-academic. The claim for autonomy is made not as a matter of privilege, but on the ground that such an autonomy is a condition precedent if the universities are to discharge their duties and obligations effectively and efficiently as regards imparting and advancement of knowledge, and also making their unique contribution to the life and development of the nation".

It, therefore, advised that before introducing new legislation, the Govt. should consult the UGC and the respective universities. Nothing should be done which would affect adversely the reputation or public image of a university. This is an obligation, of course of the university, but it is also an obligation of the State. To attain this, the Committee made a point of the desirability of ensuring flexibility in the organisation of a university; and referred particularly to the flexibility of the academic structure and the academic needs and requirements, conception and changing nature of academic problems; and suggested that the items to be covered by legislation should be kept to the barest minimum, leaving the composition & powers of various authorities & bodies to the initiative of the universities.

It is in this background that the inroads on university autonomy which are contemplated from time to time have to be examined. It may be stated at once that university autonomy does not mean absolute ruinless, uncontrolled, unquestionable power to the universities. It is hedged in by self-restraint and calls for due discharge of responsibility to the community which sustains and supports the university system. The universities cannot neglect the top level leadership and renaissant role expected of them in the nation's march towards regeneration and development. They are a reservoir of the accumulated wisdom of the community and citadels of youthful power, and are, therefore, expected to play a critical role in the movement for national resurgence.

As stated by Dr. Zakir Hussain, even in the British period, the universities were not fully autonomous. It is time the universities realized that the fulfilment of the Directive Principles of State Policy as outlined in the Indian Constitution is an imperative task before the nation; and in this the universities have a leadership role to play by way of research, communication and extension activities. They must break their prison walls and devote themselves to community education a la agricultural universities modelled on the Land Grant Colleges of U.S.A.

As of today, there are 198 universities and 7,000 colleges. Student enrolment is of the order of 4 million – 88% being for graduate courses, 10% for postgraduate courses and 1% for research. 40% enrolment is for Art courses, 21% for Commerce and 19% for Science. Women account for 1.3 M.Number of teachers is 2.5 lakhs. Four decades ago, there were 700 colleges, 25 universities, 2 lakh students. No doubt, UGC has played a significant role in quality improvement and promotion of excellence in teaching and research. There has been a conscious effort at improving the status of teachers. Educational technology and media have also entered the field.

However, the scenario reflects serious weaknesses:

- Proliferation is unplanned;
- Infrastructure facilities are inadequate;
- There is a mismatch between education and employment;
- Wastage in terms of failures and low pass per-

9 JUN 1992
Y. R. I. — MYSORE

centage is high;

- Examination reforms are slow in coming;
- Academic activities and academic calendar are often disrupted;
- Memorization, regurgitation over-shadow creat-ivity; and
- Not many colleges can pride themselves of imparting education comparable to some well-known world institutions.

The programme of Action under the New Education Policy (1986) envisaged establishment of 500 autonomous colleges in the 7th Plan, in order to :

- Reduce the load on the university system;
- Decentralize academic administration;
- Promote creativity, innovations; and
- Give freedom to prescribe rules of admission, determine courses of study, method of teaching and evaluation.

But the teachers are reluctant to have this autonomy. Here is an opportunity which should be seized in order to usher in an atmosphere of academic autonomy at the grassroot level. It would, at the same time, help build a corps of valuable expertise with self-governing culture by linking the academic community with the neighbourhood.

Curricular & Examination Reforms

It is admitted on all hands that examinations as now conducted tend to corrode the educational system by distorting the very purpose of education. They are at best an unreliable subsystem for certifying merit of a dubious nature. As a wit remarked, apart from earnt marks, one may now count on grace marks and even dagger marks to get a distinction. The universities are squeaking & crumbling under this burden.

What is needed i s:

- Modularisation and semesterisation & entrustment of the function of evaluation to the teachers. (Are there any takers?);
- Students should have the freedom of choice of modules rather than whole packages; a la cafetaria, based on self-help model;
- Provision should be made for transfer of credits from the institution to another;
- Govts should be pressurized to amend recruitment rules to delink jobs from degrees. (This has lingered on for more than a decade) Most jobs should be available to +12 candidates;
- Let the holding of competence tests by employing agencies become a universal phenomenon. Varying standards of certification have already eclipsed the reputation of several universities, so far as PSC's are concerned;
- While education upto 12th standard should be available to everybody, entrance to degree courses or other avenues should be subject to a further test, to assess aptitude, motivation and worthiness; and
- There should be no summer vacations. The universities should observe a 365 day schedule, with brief gaps for preparation, registration, acclimatization, familiarization, etc.

Grievance Redressal

This is yet another area which brooks no delay. Law Commission has gone into this question with considerable thoroughness and has proposed Tribunalization of justice in the academic field for the following reasons :

1. Educational disputes require a special expertise to appreciate the ever-increasing complexity and diversification of disciplines of a burgeoning educational system, which is not available in the general legal system. (There are about 2,000 tribunals of a specialized nature in the UK);
2. The general legal system cannot cope with the multiplicity of academic litigation, resulting in delays;
3. The present situation of availability of Industrial Disputes Act is unsatisfactory; and
4. Tribunalization will help in speedy disposal.

Law Commission has recommended a 3-tier system at grassroot, state & national levels, having taken note of the Poona University Act.

- Grassroot Tribunals shall be participative in nature, representing all affected interests and shall deal with disputes concerning admissions, examinations, students, teachers, etc.
- State and national level Tribunals shall have original & Appelate jurisdiction.
- The jurisdiction of all courts upto High Courts shall be excluded.
- State Tribunal shall consist of :
  1. A sitting or retired judge of High Court as Chairman;
  2. Two persons from those eligible to be HC judges;
  3. A retired VC; and
  4. An eminent Professor

National Tribunal shall consist of:

1. Sitting or retired judge of Supreme Court;
2. Two members from those eligible to be SC judges; and
3. Two members from retired VC's/distinguished educationists/administrators.

A relevant question is why do the universities NOT take steps to guard their autonomy in this field. Why do they force aggrieved persons to knock at the doors of Law Courts or to go to the streets?

The Vice-Chancellor

The threats to the status of the Vice-Chancellor (VC) pose another question mark to the autonomy of the university. Inconvenient VCs have been, not unoften, removed unceremoniously. In such cases, recourse to Law would be *infra dig* for a really worthy person. The VC is the head of the university, and the symbol of its prestige. As the man behind the machine, on his calibre and security would depend the progress and growth of the university. A mediocre in this position cannot be expected to offer effective leadership to the intellectual life of the university, to encourage quality researcher create a climate of scholarly and practical achievement. In the rise and fall of universities, this has been an easily discernible factor.

In order to secure and retain eminent worthies for this office, the following steps are called for :

- Draw up a panel of distinguished academicians/administrators considered fit to hold this office on a national basis;
- Give a 5-year term to the incumbent (to be made renewable);
- Make sure that he is not removed on political whims/winds;
- Process of removal should be as in the case of a HC judge;
- Strengthen the AIU; let the peers' counsel prevail;
- Bar the jurisdiction of lower courts to entertain complaints against VCs;
- Give the VC ministerial status, so he does not hang round in the corridors of power.
- And above all, give block grants linked with specific projects subject to performance audit.

Supporting Staff

It is self-evident that the VC alone cannot deliver the goods unless he is supported by an equally committed, meritorious, loyal staff. It is a painful truth that educational career is not the first priority of the university alumni. A teaching job is the spring-board for ambitious, clever graduates, who continue to strive for entry into all-India services until age permits. It is in this background that the NEP (1986) recommended the revival of the Indian Educational Service so the cream of university talent may be attracted to the educational career. There should be no hesitation in saying that while administrative services can do with high IInd class graduates, the educational services demand nothing less than Ist class minds, for on their quality would depend the quality of their products, and they would, in turn, embellish the offices which they are called upon to hold.

Now that the voting age has been reduced to 18, the responsibility of the university/political leadership to equip the young educands with the basic principles of a democratic/republican/egalitarian/participatory form of government becomes self-evident. The political parties and persons in position of authority should help create an environment in which the youth of the nation devote their formative years in acquiring high physical, mental, spiritual and professional standards.

It may be argued that the university system is a subsystem of the social landscape and cannot escape its distortions; but it is a facile alibi. If education means to draw out the best, the academic dons must accept their critical role, for where else shall we find light if not in the universities and the institutes of higher learning?

But all this shall remain yet another pious and meaningless exercise in rhetoric unless specific micro-level measures are outlined, laying down requisite performance indicators so as to ensure quantifiable accountability. In this view of the matter, the activisation of College/Departmental Development Councils on a permanent basis may be considered, to suggest measures for the fulfilment of educational goals and objectives, which may include

- Conflict management;
- Induction of talented youth into the educational system;
- Transmission of ethical, scientific values;
- Development of work ethos & pursuit of excellence;
- Introduction of College/Departmental autonomy; and
- Formulation of code of conduct

Deliberations and Action

Following the Memorandum of Intent, contained in our Constitution, numerous committees and commissions have sat in the past 40 years to deliberate upon the nature of educational reforms needed to bring about an era of progress and prosperity. But the measures adopted so far have proved short of the target; and it has not been possible to pull the system out of the ruts, notwithstanding the exhortations of and bold experiments launched by a galaxy of distinguished academicians like Shraddhananda, Tagore, Aurobindo, Vaswani, Zakir Hussain et al. When young teenagers take recourse to self-immolation and convert themselves into flaming torches, it is not merely a revolt against authority, but the testament of youth written in letters of blood that the existing system of education and governance holds no hope for them as they enter adulthood. Shall we take heed and transform the educational system to suit the needs of the consumers and the community? Otherwise, university autonomy has no meaning.

PITFALLS IN EVALUATION

Hans Raj Gugnani*

Pressure of Targets

The data-collection and analysis system tend to be influenced by artificial pressures of planners, policy makers, high-profile bureaucrats and technocrats. The cycles of five-year plans and annual plans, with their attendant targets may have their impress on the evaluation exercises. Planners and policy makers prescribe targets; bureaucrats are keen to reach the set targets; technocrats design methods and strategies to achieve results; and the evaluators may avoid questioning the "wisdom" of either the planners or the implementors. In adult education (as in other sectors) there is the concern for targets e.g., the targets of total literacy in selected geographical areas within the specified time frame. The evaluators have to guard themselves against such pressures of "Targets".

Data Manipulation

Impact-wise, the programme evaluated should show positive results: otherwise it is not a "success story". The evaluators may tend to avoid such an unfortunate situation and might be tempted to manipulate or interpret data to "prove" the programme a "success". A recent evaluation study on "Empowerment of Delhi-based Women through adult education", revealed a few areas where literacy learning made no significant contribution in case of neo-literate women of the "Experimental Group" when compared to illiterate women of the "Control Group", e.g., in areas such as (i) awareness about family-planning; (ii) safeguards against traders' exploitation through weights and measures; (iii) attitudes towards sending children to school, and (iv) gender discrimination in children's education in general, etc. etc. Any attempt by the evaluators to manipulate data to "prove" the all pervasive contributory role of adult education would be wrong, because, more than adult education, it was the powerful role of over-dozed mass media and abundant opportunities of social interaction typical of a highly urbanised metropolitan population that influenced the illiterates as much as the neo-literates. The study, under reference, did, however, bring out many positive results directly attributable to literacy-learning, without unduly magnifying the role of adult education. The moral is that "objectivity" in evaluation should, under no circumstances, be compromised to prove the total success of a programme.

Superiority Complex

Evaluators may tend to create a fear psyche in the minds of those whose programme is to be evaluated. Evaluators rarely visit field centres unannounced. Their field visits, including travel plans, are arranged by the officials of the implementing agency, and they are often taken to places of the officials' choice. The evaluators may, thus, see a version of the centres that is affected by the officials' idea of what the evaluators will want to see. This happens because of the formal relationship that is tended to be created between the implementors and the evaluators. To get at the truth, the evaluators would do well to shun showing, in any manner, their attitude of superiority, from the very commencement of the evaluation study. Rather, they must at once adopt a friendly, cooperative and participatory approach which may show that they are partners with implementors in their joint effort to "improve" the programme, instead of just finding faults and pointing out the shortcomings. This point of view is aptly described by R.S. Mathur in his brochure "Concurrent External Evaluation and Impact Studies" in the following words:

> "The very basis of organising evaluation effort therefore sometimes gives a colour of superiority and brings in an element of threat to the agency whose programme is evaluated. This can be certainly minimised if the agency adopts the attitude of mutual learning and one of partners in the whole process of evaluation of the programme and treats the implementing agency as an agency interested equally in knowing whether it is performing well and what are the weak areas. ..... The participatory character of evaluation could therefore be developed and the evaluation agency would then be able to secure more ready response and cooperation than it would be in the absence of this kind of a process."

No Soft Options

Evaluation is a complex process, depending as it does, firstly, on the number and quality of technical inputs for measuring impact on the beneficiaries in terms of programme's objectives; and secondly, on the existence of "other variables" producing their own impact on the achievements of the programme. The technical inputs (e.g. tools for data-collection, selection of respondents and sampling procedure; appraisal methodologies; data-analysis etc. etc.) have to be sys-

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**Chief Consultant, Educational Consultants Consortium, Delhi.*

tematically designed and carefully applied to ensure, as precise as possible, the quantitative and qualitative measurement of proramme's impact and the role of "other variables". It is here in the designing and application of technical inputs that pitfalls are likely. For example, if your aim is to measure the impact of adult education programme in "empowering women" you have to have two groups of samples of women for comparison purposes: viz the "Experimental Group" of neo-literate women who had gone through the adult education programme and the "Control Group" of illiterate women, selected from same locations, same socio-economic strata and same age-group. The point here is not to dwell on these technical inputs – their designing and application methodology (which will vary in accordance with the programme/project to be evaluated) but to bring home the fact that there are no soft options to the complex evaluation process and any attempt at short-cuts to save evaluation time could only be at the cost of the value of the evaluation study.

Subjectivity Factor

Another likely pitfall is the "subjectivity factory" especially where the evaluators are involved in measuring qualitative aspects in an evaluation study. For example, the effect of the programme being evaluated, on the attitudinal changes in the beneficiaries, is difficult to measure with precision. The evaluators' own socio-economic background, their pre-conceived notions on certain issues and subjects are likely to "get into" the "findings" of the study. In one of the past studies, an attempt was made to measure changes in attitudes towards litracy acquisition by presenting to respondents a set of statements being in the importance of adults acquiring literacy to which they were required to give either their Agreement; Disagreement; or Indecision. The outcome, based on simple statements, virtually based on Yes/No/Do Not Know on such qualitative aspects could hardly perhaps be adequately credible, unless substantiated by the respondents' statements of explanations. In such situations, the evaluators' role is extremely important in presenting an objective picture which is not biased or coloured through their own background or past experience etc.

Dialogue

The abovementioned issues in evaluation are suggestive, not exhaustive. The indicated pitfalls are open to discussion. A critical dialogue on the subject is welcome.

CARMEL COLLEGE OF ARTS, SCIENCE & COMMERCE FOR WOMEN, NUVEM-GOA, 403 604

Applications with full bio-data are invited for the following posts so as to reach the Principal within 15 days from the date of publication of this advertisement for the year 1992-93.

Candidates applying for lecturer's post must have passed eligibility test for lecturership conducted by the UGC. However, if such candidates are not available, other candidates will be considered for appointment.

Applications must be accompanied with CERTIFIED COPIES of mark-sheets of all the examinations from SSC onwards.

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   (Open Category Post)

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Those who are employed should send in their applications through proper channel.

Sr. M.Rosanne A.C.
Principal

The Professors' Lot

It Must Get Worse Before Getting Better

Philip G. Altbach*
Lionel S. Lewis**

Most of the news on campus is bad this commencement seasons. This has been another losing year for the American academic profession. Public expenditures for higher education have begun to sink. In 1991-92, more than one institution in three had its operating budget decreased or income did not keep up with inflation; mid-year budget cuts were reported by 45 per cent. State support for higher education actually declined for the academic year 1991-92. A well publicized survey of academic administrators and lawmakers in the fifty states found most predicting additional years of hardship – with layoffs, steep tuition increases and limits on enrollments – for public colleges and universities.

Professorial salaries are slumbering. In 1991-92, average salaries increased 5.4 percent; this year, they rose 3.5 percent, the smallest gain in more than 20 years. Since the total rate of inflation for the two years was 9.2 percent, salaries actually fell in real terms. In fact, the growth of salaries in real terms for faculty essentially stopped in 1989. In a number of states, including New York and Massachusetts, professors have seen salary freezes or even cuts. At the same time, teaching loads are slightly up and so are class sizes. While the professoriat is becoming demonstrably more productive in terms of economic efficiency, it is being attacked (mostly by the Right) as never before for its slothfulness and irresponsibility. A decline in morale has become perceptible. Faculty are less optimistic than two years ago. Early retirements are up.

Just wait, things could soon change and professor could begin to exact their revenge. We will soon see a shortage of professors in most fields as senior scholars retire. The demographics are clear. Most faculty are now between the ages of 40 and 55. There is a declining pool of new PhDs to fill the ranks of the professors who will be retiring. This could precipitously force up salaries.

Current poor planning and endless condemnation of professors will mean that we will face a crisis in which the professors will demand better working conditions and will have the muscle to make their demands stick. Indeed, professorial memories are long and it is likely that the current depressing circumstances will lead to an escalation of demands in the future. Professorial salaries will have to increase significantly to catch up with current losses. Market forces will mean that these demands will have to be met, necessitating another escalation of tuition combined with increases in governmental allocations to higher education. In short, society could pay a heavy price for its current frenzy of criticism and for short-sighted policies regarding higher education.

A combination of circumstances will very likely reverse the current professorial difficulties. For the past decade or more, there has been little growth in the academic profession. The large number of scholars hired in the 1960s have been able to teach the modestly increasing numbers of students. Even with the end of compulsory retirement rules, the generation of the 1960s will be retiring in tremendous numbers in the coming decade, leaving gaping holes in the academic profession. Enrollments will remain relatively stable, with only modest fluctuations. There is unlikely to be a dramatic decline in the near future. Thus, we have a classic seller's market in the making.

At present, we see a decline in the emphasis placed on research in the universities. Throughout the decade of the 1980s, the federal share of academic research support decreased. The percent of faculty who received research support from a federal agency also steadily declined. At the beginning of the decade, it was close to thirty percent; by the end it had dropped by more than one-third. Institutional support for research has also declined and many, including Stanford's President and Ernest Boyer of the Carnegie Foundation for the Advancement of Teaching, have called for more emphasis on teaching. In the short run, this may make sense as universities are under pressure to be more 'productive', and the easiest way to show institutional productivity is

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to teach more students for less money and to increase the teaching loads of the faculty. There will be an inevitable reaction against this situation. For a century, the 'gold standard' of professorial productivity has been research and scholarship. It is unlikely that the pronouncements of a handful of academic leaders can change the *status quo*. Further, university-based research is important to America's science and technology-based economy. There will inevitably be a realization that the nation is falling behind in research and, just as happened after Sputnik in the 1950s, there could well be a crash program to revitalize our research infrastructure that we are destroying piece by piece at the present time. Thus, it is likely that research will again assume its position of pre-eminence in the universities, again for reasons more related to the market and to national needs than to the policy pronouncements of academic leaders. Emphasis on research will place a downward pressure on teaching loads and will have an impact on the reward structures in higher education.

While many see academic salaries as too high, the fact is that they are in general geared to similar salaries in industry or the professions. At the present time, professors have little room to bargain. There are too few shortages and there is a widespread recognition that academic institutions are not in a position to grant increases because of budgetary constraints. When circumstances change, however, it is very likely that there will be very significant upward pressures on salaries. And they have begun to change. Faculty shortages have already been reported in four disciplines: computer science, business, health professions and mathematics. The universities would be much better off to maintain a modest but steady improvement in salaries rather than to take cuts and then have to play catch-up later. As with all deferred expenditures, it is always more expensive to repair damage.

We are training fewer doctorates in almost all fields. Since the mid-1960s, the rate at which students with natural science and engineering baccalaureate degrees from U.S. institutions went on to earn PhDs has declined by half. Between 1973 and 1987, the percentage of academic scientists and engineers under 35 years of age fell from 27 to 12 percent. These figures are yet another indicator that an increased number of faculty are slated for retirement in the foreseeable future.

This means that those currently in the 'pipeline' will be able to demand higher salaries and better working conditions when circumstances change. The situation is truly alarming, as has been pointed out by William G. Bowen and Harvard's President Neil L. Rudenstine in their new book *In Pursuit of the PhD*. It is taking longer for most students to obtain the doctorate and drop out rates have increased. In some ways, the statistics are even more dramatic than they seem because many foreign students are studying for their doctorates in the United States and a significant proportion of these students will return home after completing their degrees. Calls for more support for doctoral study have fallen on deaf ears. It takes a long time to train a PhD – it is not possible to correct this error very easily.

It is possible that the circumstances of the 1960s will return to American academe although without the added force of massive enrollment increases. During that decade, severe shortages of faculty members drove salaries up and teaching loads down. Large numbers of professors were hired by universities faced with severe shortages – and some of those teachers hired in haste proved to have been mistakes. Professors, sleek with their newfound wealth and market-driven power, de-emphasized teaching and demanded loaves, fishes and more. They became so wrapped up in their own careers that they neglected the curriculum and the quality of undergraduate teaching. Student unrest emerged, in part caused by professorial neglect and the dehumanization of the university. In an odd way, American higher education has been paying for the excesses of the Sixties for the last two decades. We seem poised to repeat the same mistakes although probably on a somewhat smaller scale.

Professors do not like being maligned or seeing their salaries and benefits decline and their work loads increased. They do not like being trained by the bad odors now wafting from so many campuses – reports of overcharging the government for research grants, revelations of student-loan defaults, low graduation rates, alleged repression of freedom by the Left and other thought police, controversial affirmative action policies for admission and hiring. This and the depression in academic salaries will make it more difficult to get people to consider an academic career at the very time that there will be the greatest need to replace those hired during the great expansion of higher education in the 1960s.

Still, there is little faculty can do to alter the current economic picture. The situation will change – and probably sooner rather than later. Academic institutions are immensely conservative and it is unlikely that the basic ethos will change much. Some will not easily forget what is being done and what is being said – and believed. When circumstances change – when the effects of the shortage of new PhD holders is combined with widespread retirements take hold – the professoriat will exact their revenge. American higher education might not be the better for it.

Application of Educational Technology in the Distance Teaching System

Avtar Singh*

Educational Technology is characterised by the definition of objectives to be achieved by the learners, the applications of principles of learning to the analysis and structuring of the subject-matter to be learnt, and the use of appropriate methods of assessing student performance to evaluate the effectiveness of the course and materials. In short, Educational Technology is a systematic way of designing, carrying out and evaluating the total process of learning and teaching in terms of specific objectives, based on research in human learning communication, and employing combination of human and non-human resources to bring about more effective instruction. Educational Technology, therefore, is the application of systems, techniques and resources (or aids), and can be broadly characterised by the educational needs of the learners, the background perceptions and environment of the learners, the instruction objectives – general as well as specific – of the educational process, the subject content required to be given to the learners, the most appropriate medium through which learning has to be achieved, application of principles of learning and communication to convey the subject content through the medium, pre-testing the material thus prepared, and evaluating the process and materials, keeping in view the objectives and providing proper feedback into the above process. Technical developments have given educators different types of distribution media including television, radio and telephones but the key challenge lies in the human desire to reach the potential learners.

As part of a broader effort to achieve social justice and to establish a closer linkage between higher education and national development goals, there has been a growing concern in many parts of the world to provide access to higher educational institutions to new categories of people. The traditional university education has gradually come to redefine its function, the public it serves, its programes and, consequently its organisation and methods.

The success of the Open University concept has convinced many countries throughout the world that the distance teaching systems, based on the use of new technologies, can make an effective contribution to the quantitative and qualitative improvement of higher education in the larger context of lifelong education. Educators on the look out for alternative models which could reduce the physical, social and psychological distance that separates knowledge and the learner have, therefore, turned their attention to the possibility of using the communication media to extend education in both space and time and to diversify its objectives, content and form.

It is necessary to distinguish between those components of the distance education process that are more dependent on physical arrangements and equipment and those that emphasize course content and the way material is presented to achieve effective learning. The hardware aspect refers to the application of engineering principles or instruments useful in the process of distance teaching. It comprises such teaching aids as slide projectors, tape recorders, motion pictures, computers, television or closed-circuit television, film projectors, etc. However, the use of these aids in education does not imply any mechanisation of the teaching learning process. Indeed, the aids help in transmitting, amplifying, distributing, recording and reproducing educational materials with a dramatic increase in the teacher's impact on the distance learner. The software aspect of educational technology refers to the course content and its related concepts and theories and it may as well be called courseware.

Educational technology has implications for correspondence education and valuable strides can be taken in working towards minimizing the turn around time for lessons while improving the quality of feedback to distant learners. Distance education also caters to the needs of working men who demand new knowledge within their branches and have a right to call for participation in cultural development. Correspondence education is one of the means which can be used to create these opportunities for education and develop new courses by employing the principles of educational technology. Distance teachers must employ alternative means for imparting educational programmes to those learners who are under-educated and are reluctant to take part in classroom instruction to avoid exposing their slower rate of learning.

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As both hardware and software are functionally interrelated, educational technology may be viewed as more than the sum of its parts. The hardware and software of educational technology play a vital role in providing instruction in an individualised manner, tailored to each learner's unique learning abilities and needs.

Less Teaching and More Learning

As the aim of distance education is less teaching and more learning, which too is the goal of progressive educators, a need for an integrated theory of teaching based on both hardware and software dimensions of educational technology is inevitable.

The hardware comprises various teaching aids. In a distance teaching system, the main aim is to convey the message in a form which enables the student to grasp it, understand it, and store it. Teaching aids like audio-visuals contribute enormously to the communication process in the teaching and learning situation, by making the subject matter more easily comprehensible, and increasing, at the same time, the retention factor. They establish an effective contact between the people who want to learn and whatever it is that they wish to learn. The audio-visual techniques, as an effective aid to the distance teaching and learning process, have an immense potential in a developing country like India where considerable differences exist among the students because of their varying socio-economic backgrounds. They are based on psychological principles of learning and they can produce significant results. Educational Technology also constitutes what might be called home learning system – the telephone and appropriate interfacing equipment, the learner's own television, film and video tapes and cassettes – it makes the distance learners proceed at their own speed or go over material more than once if they wish to. It implies active involvement of learners in teaching-learning activity, grater variety of dissemination ideas and knowledge, increased retention of information, usually accompanied by increased motivation to learn. In this way, thorough details in research and structured programming in the communication process are ensured. There is a concrete basis for conceptual thinking and thereby reducing the meaningless word-responses of students. A continuity of thought that is especially true of motion pictures is maintained and the distance learners gain the reality of experience which stimulates self-activity on the part of the pupils. Furthermore, they have the potential of promoting activities such as self-evaluation. Appropriate application of educational technology for the distance learners can thus help to reduce the effects of such detrimental factors as fear of not being able to keep up or unwillingless to ask questions in case they should turn out to be stupid.

Educational media are used as enrichment material at the disposal of the teacher. The role of the teacher is not changed at all by the use of such media. He alone decides, whether and in what way to use media within the usual system of student-teacher interaction. Usually we find the usage of media in this context in connection with teacher-oriented learning pattern. So educational media are a means of transmitting didactically structured learning material, usually according to the direct teaching method. The role of the teacher, as far as he is present, is essentially different he has given up part of his teaching functions to the medium or the media system. The greater part of the learning activities takes place without a teacher being present.

The software has its significance in the application of the psychology of learning to distance teaching activity. The programming of instruction by using scientific procedures based on psychological principles is the principal feature underlying the software technology. This programming of instruction involves the designing of instructional material and systems, resulting in a rationally constructed and empirically validated product or set of procedures. In the distance teaching systems, the software process consists of determining the objectives of teaching, visualising the conditions under which students will demonstrate their mastery of the subject matter, designing and evaluating the criterion measures which would rate students individually on a scale of attainment of the desired knowledge or behaviour, testing the potential distance learners groups to study their behavioural characteristics which will determine, in turn, the design of the lesson, selecting instructional media and preparing instructional material in draft form, and refining the production through try-outs with individual students until effectiveness reaches satisfactory levels. This process is then continued with increasingly large groups of correspondence students until effectiveness proves satisfactory in approximately real situations. The materials are finally validated by the publication of a complete description of their performance in terms of their effect on specified groups of students under carefully described conditions. Software technology, embodying the principles of the psychology of learning, enables the teaching function to achieve multiple objectives in the field of distance education. The scope of software technology encompasses prescriptive and normative aspects. It should be able to prescribe the procedures as well as a yardstick for the evaluation of the success of the teaching-learning venture. Such a theory, when incorporated in the instructional process of distance teaching, enables one to control and shape the learning environment so as to best realise the stated objectives. It works out ways of giving a sequence to a body of knowledge, so that it can be readily grasped by the student. It suggests and differentiates between the optional or enriched audio-visual media under the control of the teacher and the basic or essential audio-visual media necessary for learning the topic.

In India, despite many extravagant claims and predictions about what technology will bring to education, the promised changes seem remarkably slow in coming. What Eric Ashby called the "fourth revolution" has not altered the fact that the teaching methods in higher education remain largely traditional. However, technological innovations could affect institutions of higher learning in very radical ways. Education could take place primarily in the home, facilitated by developments in two way audio-visual distance education between a teacher and a large number of remote students. There is one function of the broadcast programmes that deserves attention. While they are not pace-makers for the course design, the programmes accelerate the pace of student's progress. Together with the due dates for assignments, the regular transmission of the broadcast programmes serves to keep students working at the pace of the course. In advanced countries, 85% to 90% of students follow each programme, and this number does not fall off even when the pressures of examination revision comes round.

Satellite Instructional Television Experiment

The Satellite Instructional Television Experiment (SITE) has come to be recognized as a landmark in the history of mass-communication and mass-education in India. Three important capabilities of satellite transmission that are of particular interest for distance education are : (i) Satellites allow a visual link as well as an audio link between visual locations in virtually any part of the world, hence permitting a relatively cheap and convenient form of 'video conferencing', (ii) they can be used to broadcast educational material to a large number of people in one area, and (iii) they can be used to disseminate specialized material to widely scattered individuals living in geographically isolated areas. In India, the educational programmes introduced by SITE are of enrichment type. By and large, these are acceptable to the target audience, establishing thereby the success of television as a medium of education. Presently syllabus-based lessons are telecast by Doordarshan in Delhi, Bombay and Madras. Furthermore, with the establishment of Indira Gandhi National Open University in Delhi, the distance education on the pattern of BBC experiment can be continued on different channels at different durations. In Britain, adult education broadcasting and associated publications are provided by both the BBC and the ITV companies. Each organization has its own advisory body which points out opportunities for educational broadcasting. In practice, both organizations work on a formula for adult education in order to provide definition of adult education broadcasting. The chief formulations are that educational television programmes for adults are programmes (other than school broadcasts) arranged in series and planned in consultation with appropriate educational bodies, to help viewers towards a progressive mastery or understanding of some skill or body of knowledge.

The advantages that can be derived from the use of television as an instructional aid to distance learners are many and varied. It combines the best elements of the radio and the film. Educational television (ETV) is capable of making distance learners learn more efficiently. It can transmit an aural-visual image of almost anything. Instantaneously it brings to the audience scenes and events from a distance. Televised broadcasts can be filmed and these and other films can be telecast repeatedly and at will. Films used in television have a definite advantage over ordinary sound films because they can be edited and brought up-to-date by dubbing in a new sound track. Through live programmes, distance learners can know the great personalities of the day in a much more intimate way. Expressions on the face and of the eyes can be exactly noted. As a student of literature I can say that the plays of Sophocles, Shakespeare, Bernard Shaw, O'Neill, Tennessee Williams, Edward Albee, Arthur Miller, Kalidas, and Tagore will be a more rewarding experience for the distant learners when viewed on the television. This sensation of immediacy and actuality causes the pupils receiving the programme to realize that they are seeing and hearing life in the making. The best example of the use of educational television in Britain, and one of the best in the world, is the Open University, which provides a systematic series of courses and it is hoped that the Indira Gandhi National Open University in Delhi will follow the UK model making changes wherever necessary with regard to the course material and broadcasts. In a developing country like India, television can be a very important medium because distances are great and educational facilities are few. In the distance teaching-learning process, ETV can be resourcefully used as an aid to the lessons sent by correspondence, as a self-sufficient set of lessons covering the entire syllabus in a particular course and as a stimulant for further exploration ETV is a device for motivation and reinforcement of the Personal Contact Programme. Television programmes can promote the development of pupils' power of observation, insight, practical understanding of lessons, and reflective thinking. Slow-scan television, videotex electronic blackboard and microprocessing systems also form part of the hardware of educational technology. It may be argued that a brilliant, inspiring lecture, with imaginative use of visual aids, will help people learn more effectively than a badly written, inaccurate correspondence lesson. Conversely, a well structured stimulating, student-active correspondence lesson will undoubtedly be more effective than the performance of a mumbling lecturer, reading out his notes to an amphitheatre full of bored students. Furthermore, all broadcasters regard themselves as educators to a certain degree, even if the education in which they are involved via broadcasting is of a highly informal kind. But devoted educationists are sometimes the worst enemies of their own objectives. The trouble with educators is that they have the "angels" on their side and certainly in some societies, a majority of people turning to broadcasting will go for the World Cup, Olympic Games or Asian Games, rather than a mathematics course. So how do planners decide on which media to use for distance education projects, once the point has been taken that the critical variables for effective learning are concerned more with the pedagogical quality of the actual learning material rather than the nature of the medium.

While the fact remains that educational technology has not yet made much headway in our education system, the critics of educational technology have not spared it at all. It is argued that teaching will become a process of grinding the subject matter into a kind of baby food and spooning it out to the learners who will never learn to eat by themselves. Some critics believe that while new methods – for example, programmed instruction – may be effective for learning facts and understanding principles, they do little to encourage original thought, initiative and imagination. Fear has also been expressed that the introduction of hardware technology may make the teaching-learning process mechanical and hinder the natural way of learning. In fact, education has continued to rely almost exclusively on the direct visual and voice contact of teacher and pupil, and on a limited spectrum of technologies books, chalk, board, and the mails. In spite of recent developments in the application of technology to distance teaching-learning programmes, the satellites, holographs, and computers have remained circumscribed and limited to the fringes of the vast educational system and unable to make any major impression on the bulk of the system.

It is necessary to identify what resources the project will have available. Even if students have access to television receivers, at the right time of the day, at home or in local viewing centres, and have experience of using television as a learning resource, this is no guarantee that the distance institution will have access to producing and broadcasting facilities and to skilled staff. And there is little point in providing students with detailed references for further reading of specialist textbooks, even if the students have the necessary study skills to use them effectively, without the resources or the bargaining power to make such books available in sufficient numbers, at the right time.

No doubt the production and availability of hardware or machines is much ahead of the software. The machines are available, but the educational material for which the machines have to be used is scarce. The hardware is much ahead of planning, coordination and management required in the use of educational media.

However, it may be pointed out that it is very easy to acquire hardware like a radio, television set, film projector, audio-cassette recorder, etc. It is difficult to maintain and keep them in working condition with the input of spare parts required later. It is much more difficult to procure the appropriate software on time from the available though limited resources. Neither can one produce one's own software in areas such as filmstrip or audio-tape. It is the coordination between all the elements of the hardware and the software which becomes a problem.

In spite of the advantage of visual medium, education through television suffers from certain inherent limitations. Teacher-taught contact is almost missing. Then there are problems of operation of television sets (where the viewers don't own them), congenial viewing conditions, relevance and comprehension of the contents being telecast. Education through television is strictly one-way communication. Programmes telecast are based on individual or a small group of programmers' perceptions. The tele-teacher teaches with his own convention without much caring of his user distant learners. Once the programme is telecast it finishes for ever. Neither tele-teacher nor programmer marks any effort to know whether the programme has been viewed; and how the distance learners have received it. This is all one sided bombardment of message. The viewing end is completely ignored.

It has also been argued that the global example of TV is one such medium, where the teacher has felt threatened by its introduction. Very often the developing countries, in order to reach the level of developed countries, go in for hardware and machines. This has resulted in the teacher either developing total apathy towards the medium or feeling threatened by the medium. But if he is made to recognize that educational materials and aids are there to help him improve the teaching-learning process, his acceptance of sophisticated devices will be assured. A consciousness amongst administrators and educators that the textbook is not the only means of learning will have to be developed as well as the idea of learning that proper planning is required towards production and utilisation of simple forms of aids.

The preparation of simple or sophisticated teaching aids requires an interesting manner of teaching and communicating to the specified target audience. A knowledge of the skills is required to make the education material. Unfortunately, we have never been able to involve the best people in different subject areas in the preparation of such educational materials. In other countries one finds top scientists being actively involved in such exercises. Can such persons in the developing countries begin to see the importance of such an activity? And above all, can various kinds of people interact together to create the culture of imparting distance education through educational technology – people who know the subject, teachers, educational administrators and persons in industry? This requires a loosely-knit federation of interests and organizations including broadcasters, publishers, government departments, management interests, institutions imparting distance education and other groups.

What is more very few commercial television stations are involved in content research or instructional design. It takes a number of years for an educational television agency to develop the skilled manpower necessary for striking a balance between the requirements of TV production and the objectives of the educators. The research and development phase of educational television is often more time consuming than the actual production. Television programmes can seldom convey all the information required and are most successfully used in an integrated package with print, non-print and human components. Every effort should be made to ensure that the television programme complements rather than duplicates the other materials. Otherwise the viewers, who tend to be more conscious of time than are their teachers, will not watch more than one or two programmes before abandoning them for textbooks that cover the same ground.

Broadcast distribution is not adequate for programme distribution since it forces the learners to adapt to a schedule that may have been drawn up thousands of miles away. The viewer has no control over the speed of presentation. Some programmes may require a second or even a third viewing for full comprehension, which is usually impossible with broadcasting. Video-tape and videodisc distribution is superior from a pedagogical standpoint but since very few students own playback equipment most have to make do with an inferior means of distribution. In advanced countries, some institutions have set up learning centres with video equipment and a programme library, but the time and travel required for using such centres can be insurmountable obstacles for students. In India, the University of Poona is making a serious effort to develop close-circuit television. The UGC while recommending the introduction of undergraduate course through Marathi medium has also approved a grant of block assistance to set up CCTV and thus use the video-tapes for extension of education. Naturally this requires some software, supporting staff, and creation of community centres to make the scheme effective. The UGC should give financial support to the institutions imparting distance education to set up Study Centres at different places with audio-visual and video-cassette libraries and equipment.

The preceding discussion thus revolves round some of the challenges facing those who are engaged in imparting distance education whether they be broadcasters, educationists or planners. We must re-plan our broadcast resources since broadcasting whether on television or radio is in a position to make a unique contribution towards education at all levels. Any future allocation of channels and frequencies or redistribution of national and local facilities, should take into account the educational needs of India – both formal and informal.

However, educational technology is one factor in the interaction of teachers (at a distance or face-to-face), media and students. Which methods should be used (programmed instruction, group work or a scholastic and empirical approach to the learning material), depends on the whole teaching-learning pattern and cannot be decided in isolation. In distance teaching system the consideration of the situation of learner should be central. He is usually isolated, he seldom has reference material at his disposal, he is perhaps tired after a long day at work, he has a family, and his external learning conditions are insufficient etc. The main function of educational technology used in distance study units is to anticipate his difficulties, reassure him by self-controlling tests, give him a clear picture of what he is going to learn and how he should do it i.e. how he should learn to learn.

Educationist Nehru and Culture of Mind

An Anniversary Tribute

Shobha Vaidya*

It is always difficult to judge great and extraordinary man. A gentleman by birth; lawyer by profession and politician by accident, Nehru had the outlook of a scholar, the detachment of a scientist and unbounded love of a humanitarian.

No single analysis could ever hope to exhaust the qualities of his enduring fame. The real world of Jawaharlal was inhabited by perfectly cultured beings and where 'wants' had lost their etymological meaning. His vision of future India is not difficult to interpret but translating it into practice would require the ceaseless efforts of the countless millions spread over numerous generations.

What struck Nehru most, was the extreme poverty of his countrymen. According to him poverty was the greatest of all crimes. That is why he emphasised the removal of this poverty as a first major task. To him it was nonsense to talk of India's great past, if her present was so depressing. He writes, "It is an insult to talk of culture to people who are starving".

As an analyst Nehru had analysed the cause of the rise and fall of civilization. He was also aware of the causes of India's downfall. According to Nehru the only way of achieving 'Freedom' was to beat the Britishers in their own areas of accomplishment; But this was possible only by gaining total independence, therefore, he strongly disagreed with the humiliating fact of foreign domination.

Regardless of character of 'education', he realized that it had opened the doors and windows of mind to new ideas and dynamic thought, but he had no faith in mere aping of Western models. He neither liked the total departure from the past nor the denial of the new urges and creative tendencies. His versions and verdicts are expression of his thinking which he had for his great country. "A free India with her vast resources can be of great service to the world humanity. India will always make a difference to the world; fate has marked us for big things". In his broadcasts he expressed, "If we aim at the big things of life, if we dream of India as a great nation giving her age old message of peace and freedom to others, then we have to be magnificent ourselves and be worthy children of mother India". According to him prosperity of India depends on scientific techniques and growth of industries, but at the same time he had great faith in Indian ideals. He was of the opinion that, "we cannot afford to discard those ideals which this country adopted some thousands of years ago. Material prosperity without ideals is harmful".

Nehru had very high esteem for Indian culture. He believed that Indian culture has to be prominent in international culture. He was also aware of the role of religion in human society. He believed in integration of science and religion because both these aimed at the welfare of the individual. As a true patriot he devoted his entire energy in making the country more prosperous and developed. Though he had great pride of past glory of India, he had contempt for talking about past alone. He pitied both the Hindus and Muslims who always wept for the past.

By his extensive and deep reading he knew the causes of India's downfall. The caste system was one of them. But he did to deny its importance. He had an opinion that, " The caste ... is a part and an integral part of a much larger scheme of social organization. It may be possible to remove some of its obvious abuses and lessen its rigidity and to leave the system intact". He was worried that the breaking up of this huge social organization may well lead to complete disruption of social life, resulting in absence of cohesion, mass suffering and development on a vast scale of abnormalities in individual behaviour unless some other social structure, more suited to the time and to the genius of the people took its place.

In 1928 he declared that there was a need to have a proper system of education in India to make her strong and great. "All the world over there is a realization that only through right education can better order of society be built up....Education is not something in the air....Real education, must be based on the actual environment and experiences of the child and it must fit him for the work he will have to do in after life".

Nehru was certain that with the advancement of education India would become cultured and civilized. So he declared,"It is the duty of the state to provide good education for every child in the country. And I would add that it is a duty to provide free education to every child in the country".

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A Successful Engineer

Prof C. S. Jha, Vice-Chancellor, Banaras Hindu University, delivered the Convocation Address at the 14th Convocation of the Indian School of Mines, Dhanbad. He said, "A successful engineer and leader is one who is good in using himself as well as developing in others all the eight faculties : he uses *extraversion* to be attuned to the questions being raised, demands for action and new physical facts that impinge on solutions; *introversion* to make sure that proposed solutions have sound conceptual basis, *sensing* to look at all the facts to see the present situation clearly, and *intuition* to imagine new possibilities, to see patterns, to forecast the future. He utilises *thinking* to make a thorough logical analysis of causes and effects, and uses *feeling* to weigh the merits of possible solutions. He makes use of the *Judging Orientation* for ensuring that the solution is well organised with a workable plan and schedule but first utilises the *Perceptive Orientation* to gain complete assessment of the problem and to stay open to unusual approaches and to be alert to unexpected changes." Excerpts

Engineers and applied scientists are not usually given to introspection. Our sense of satisfaction is largely met by our primary activities of analysing, designing, constructing, operating, maintaining, and managing. Filled with a sense of achievement and usefulness of these pursuits, we seldom ask ourselves about the meaning of engineering and technology or why our technological society has developed as it has; we feel happy enough just to do something useful and take pride in the fact that we are living in a technological age which values our creative abilities. During the last two centuries many societies have undergone rapid economic transformation through the use of Science and Technology as instruments of progress. Technological progress has almost become synonymous with economic prosperity. The dominance of the West in the application of Science and Technology in human affairs and their simultaneous ascendency at the economic and political planes have convinced people of the third world that Science and Technology alone can transform their lives and solve their problems of hunger and poverty. Nehru, one of the architects of Modern India demonstrated his faith in Science in piloting the historic "Scientific Policy Resolution" through the Indian Parliament on 4th March, 1958, which laid down the basic aim in general to secure for the people of the country all the benefits that can accrue from the acquisition and application of Scientific knowledge. The four decades of continuous encouragement given to the growth of Science and Technology in this country has resulted in setting up a vast infrastructure of scientific institutions, laboratories, and industrial establishments, and making us capable of manning, operating, maintaining and developing large technological systems. We have become self-sufficient in food, clothing, a wide range of consumer durables and medicine. We are also by and large self-sufficient in our requirements of transport and engineering goods, petrochemicals, heavy and fine chemicals and have capacity for indigenously setting up industrial plants for power generation, mining machinery, steel, cement, sugar, fertiliser, engineering goods, etc. In this process we have emerged as one of the largest producers of scooters, bicycles, chemicals, engineering and electronic goods and cotton yarns. We are among the world leaders in the utilisation of Atomic Energy, and Space Sciences and Technology and are poised for a major overhaul of our transport and communication systems. All these have been achieved through a sound manpower development strategy in which your school also has played its part as well as in modernising our agriculture and diversifying our energy sources.

In spite of these achievements, India continues to face large scale poverty, unemployment, illiteracy and malnutrition. The pressure of population has nullified much of our development gains and inequitable distribution of benefits have compounded the problems of the common man. When development indicators are put on per capita basis India quickly drops from amongst the top ten industrial nations to the bottom twenty or so nations of the world. This is a reality and we should carefully analyse where we have gone wrong.

All of us who value education feel that this has been an area of low developmental priority, if not outright neglect. Even after more than forty years of independence, we have nearly one third of our population who do not know how to read and write, and in some areas this figure is even more than half. Some research studies have confirmed as expected a direct correlation between development and literacy, more so between female literacy and development. It is a sad fact that in some areas of our country we have sadly neglected bringing the fruits of education to our female children. In a country which gives too much prominence to the male offspring, this could have been expected by our policy planners. They should have realised that without properly educated motherhood we would not be able to reduce significantly the prevailing high birth rate, the high infant mortality rate and malnutrition among the new born and the very young, increase the rate of retention of young children in the school system, improve personal and social hygiene, and increase family income. The recent success of the literacy mission underlines the fact that such efforts should have been started much earlier. If a small country like Cuba can convert its whole population to full literacy in less than twenty four months, we with our large army of school children, educated adult manpower, and voluntary agencies could surely have achieved similar success given a similar political will.

Literacy alone would not solve all our ills. The current emphasis on functional literacy could only improve marginally the productivity of our labour force and allow better appreciation of life around us. What is needed is better education, better housing, greater employment opportunities, more equitable distribution of benefits of development, better quality of life, higher integrity and better sense of values. Can these be achieved through reorientation of government policies in the social and technological planes alone or would they also need personal sacrifices, hard work, and dedication? I am sure you know the answer and the country is looking forward to your inputs in its resolve to banish despair and bring back hope for real progress.

One of the major issues that confront us today is the slow but rapid degradation of our environment. Some years ago we used to feel that third world countries are free from environmental problems because of the low level of their industrialisation. This unfortunately is no longer true and some of our cities are now more polluted than cities in more industrialised nations. We know that all development process modifies the environment to a small or large extent, and there is no escape from this modification. What is necessary to estimate is the social cost-benefit ratio of the alternative development models. Should we have a number of small production units with large employment potential but possible loss in productivity or have one large unit forcing large scale resettling of population and change in life styles? Should we have large multipurpose dams with benefits in irrigation and power generation at the cost of large scale submersion of land, evacuation of habitats, destruction of flora and fauna and danger of earthquakes or should we think of a number of smaller dams with distributed smaller benefits over a larger area of population but with lesser negative effects? Some of the alternative solutions could be more expensive but do they reduce social costs? Engineers, Technologists and Applied Scientists today must answer these questions, and have means for doing a realistic assessment of alternative technological solutions. The global concern about acid precipitation arising out of burning fossil fuels, the depletion of the Ozone layer and the global warming caused by the greenhouse effect demonstrate that what was initially thought as an acceptable price to pay for technological progress and human comfort could in the long run create untold sufferings for all mankind.

The greenhouse effect is an example of a problem which is truly global in scope. All nations share the climatic changes resulting from the changes in the atmosphere caused by the sum of all human activities on the planet. Calculations based on 1987 data showed that only four countries in this region of the world rank in the countries which produce 86% of the carbon dioxide omissions : China (8.7%), Japan (4.7%), India (1.2%) and Australia (0.7%). The task of preventing massive social dislocation due to climate change is formidable. It is not primarily a technical challenge but a social one, calling for a level of concerted action never previously witnessed. If global emissions of carbon dioxide and other greenhouse gases are to be limited, there will need to be an acceptance of their special responsibilities by those countries which are currently profligate users of fossil fuels. Thus the industrialised countries will need to make very large economies in fuel use if moderation of climate change is to be combined with elementary justice for the countries which currently make little per capita use of the valuable fuels.

In addressing environmental issues we need to maintain this awareness of the global nature of the problem. Nothing is achieved by the export of pollution from one country either directly as by the "tall chimneys" policy, or indirectly, as when O.E.C.D. countries transfer polluting industries to less affluent nations. A final environmental issue which deserves particular attention is the sustainability of agricultural practices. It is, of course, important to every country that it is able to feed its population. There is nothing more tragic than the organisation of food production in such a way as to damage the long-term capacity of the land to produce food. Agricultural or economic practices which impair the long-term productivity of the land must be resisted if at all possible.

The dominant view in many societies is that technology is inherently a social good. It should perhaps be said that this view has also led to a reaction against technology and an explicit rejection of what have been called technocratic values. Recent controversies about Silent Valley, Tehri Dam, and Narmada Sagar Project are examples where a large section of society has rebelled against the imposition of a given technological solution leading to a wider examination of the role of Technology in modern society. There is little to commend the alternative of mindlessly promoting and technology which is feasible and forcing society to adopt the same irrespective of the social costs involved. Johnston has chronicled the development of technology assessment as follows :

"In the first flush of enthusiasm great hopes were held for the possibility of being able to foresee and therefore avoid all the problems arising from thoughtless implementation of technology. When such impeccable foresight proved elusive, there was widespread disenchantment. We are now in a third phase of more sophisticated assessment of technology. We do our best to foresee problems but we recognise that there will always be new and unforeseen difficulties when the technology is applied. Thus there is a need to monitor and review implementation of technology, however fastidious has been the prior assessment." Silting of many reservoirs at hydroelectric dam sites at much higher cost than expected is a case in point.

Many of you working as mining engineers and geologists will be up against several environmental problems associated with open cast, surface and underground mining of natural resources and it should be your endeavour that the surface environment after mining operations should not produce the ugly heaps of rubble and waste that one comes across today in most mining areas. The other major issues which you would face along with all your brother engineers and technologists is the issue of safety. Safety consciousness has grown in the country after every technological disaster. It is not only protection against the risks of local accidents in machine operation is involved but also possible short term and long-term effects of accidental misuse or wrong operation of equipment and facilities. The mining industry in general and coal mining in particular had in our country suffered a great deal due to the utter disregard shown to safety standards by private owners interested in making quick profits. Nationalisation of the industry and public outcry against faulty practices have made the industry aware of strict safety standards in mining operations and the country as a whole is looking forward to SAFE ENVIRONS at the WORK SITES so that the dream of ZERO ACCIDENT POTENTIAL comes within sight. I am happy to know that Coal India has enshrined safety in the statement of its mission : "The mission of Coal India Ltd. is to produce the planned quantity of coal efficiently and economically with due regard to safety, quality and conservation". It is remarkable that in a period of 10 years between 1973 and 1983 the fatality rate per million tonne of output has come down from 1.81 to 1.21 and for 3 lakh manshifts from 0.29 to 0.18 and targets have been put up for bringing these figures further down to 1.0 and 0.13 respectively. The serious injury rate during the same period has come down per million tonne of output from 14.63 to 10.64 and for 3 lakh manshifts from 2.34 to 1.59. The present figures I am told are much lower and even higher standards of safety are being envisaged for the future. I am certain that you will join the efforts of all mining executives to be continuously on guard against accident and use preventive strategies right from the planning stage and through execution and exploitation. I am told that most (about 61.42%) of the fatalities in mining are caused by roof and side falls and large scale use of roof bolting and increasing use of dependable steel support are sure to help reduce such failures. Since mining employees are constantly fighting against the forces of nature and in this fight losing significant number of valuable human lives, it is imperative that all industrial processes should have inbuilt safety standards and an internal organisation to monitor measures for preventing accidents and to bring organised and quick relief when accidents do occur in spite of precautions taken. Proper forethought in planning such a system can prevent major disasters in the future.

One of the major failings of our engineering endeavour is the low level of productivity in the entire industrial sector. If India has to take its fair share of the global market, it has to improve both the quality of its product as well as the productivity of its efforts. The protection given to poor productivity by low labour rates is no longer an asset because quality and productivity have got closely interlinked and one can no longer dismiss modern manufacturing techniques in favour of labour intensive processes. Mining like other industries is in urgent need for improving productivity. This can be achieved only through improvement in the design and utilisation of mining machinery, use of safe and reliable working methodologies, and satisfactory occupational health services. In the past people thought of occupational health only in relation to factories and mines, today it covers all types of employment and includes health surveillance of workers, industrial disease control, occupational psychology (like mental health of workers arising due to occupation, migration, stress due to shift duty, and other behaviourial problems), ergonomics and occupational environment. It is not only necessary to fit the proper man to the proper job, it is also required to make certain that the man remains in good health over his entire working life. It is not the machine but the man behind the machine who is vital in giving the required results and production in an industry. Mining is an industry where working conditions are often very severe and it would be your endeavour to make certain that you and all who work with you are given as much protection under occupational health service as is humanly possible. Many sections of the Mine Act, Factory Act, Environmental Pollution Act, Air Pollution (Prevention) Act etc., help you to legally enforce welfare measures to improve occupational health and improve productivity.

We Indians are often accused of not being able to work in a team. We are considered to be brilliant individually but poor collectively. This may not be really true but it is necessary for all of us to learn to collaborate and work in a team, accept group dynamics of leadership styles and follow group behaviour in an orderly manner. Psychologists influenced by the work of C.G. Jung have been trying to identify traits in human beings which could be used for improving aptitudes and achievement, motivation and creativity. Myers-Briggs Type Indicator (MBTI) have been successfully used by many organisations to teach communication, team work, career planning and leadership. Jung's model of psychological types describe four pairs of choice and assumes an intrinsic preference for one of each pair over the other. Extraversion or Introversion (E or I), Sensing Perception or Intuitive Perception (S or N), Thinking Judgement or Feeling Judgement (T or F), and Judging of Perceptive orientation to the world (J or P). Does the person's interest flow mainly to the outerworld of actions, objects or persons (Extraversion) or the inner world of concepts and ideas (Introversion)? Does he prefer to perceive the immediate real, practical facts of experience and life (sensing) or the possibilities, relationships and meanings of experience (Intuition)? Does he prefer to make judgement or decisions objectively, impersonally, considering causes of events and where decisions may lead (thinking) or subjectively and personally weighing values of choices and how they matter to others (Feeling)? Does he prefer mostly to live in a decisive planned and orderly way, aiming to regulate and control events (Judgement) or in a spontaneous flexible way aiming to understand life and adapt to it (Perception)? Since each person has an intrinsic preference for one member of each pair, there are sixteen possible groups of individuals classified as ISTJ, ISFJ, INFJ, INTJ etc. All sixteen types come to higher education including your school, all types graduate and are employed. Is it possible that our common curricula and teaching methodology give encouragement for development of all the different types? What role has the education process to allow minority groups to have a voice? Those of you who will be managing large work forces may have to understand these psychological differences, encourage individualities for leadership, develop training for using faculties other than the preferred ones so that you can achieve your corporate goals with active participation of your work force. A successful engineer and leader is one who is good in using himself as well as developing in others all the eight faculties : he uses *extraversion* to be attuned to the questions being raised, demands for action and new physical facts that impinge on solutions; *introversion* to make sure that proposed solutions have sound conceptual basis, *sensing* to look at all the facts to see the present situation clearly, and *intuition* to imagine new possibilities, to see patterns, to forecast the future. He utilises *thinking* to make a thorough logical analysis of causes and effects, and uses *feeling* to weigh the merits of possible solutions. He makes use of the *Judging Orientation* for ensuring that the solution is well organised with a workable plan and schedule but first utilises the *Perceptive Orientation* to gain complete assessment of the problem and to stay open to unusual approaches and to be alert to unexpected changes. In spite of our natural psychological preferences it is possible to train ourselves to develop and use even those attributes which do not come to us naturally.

Before I conclude, I would like to bring to your notice the implications of the new economic policies enunciated by the Government during the last few months. The liberalisation started by Rajiv Gandhi Government and supported by subsequent Governments has now been extended fully by dismantling bureaucratic controls, encouraging direct foreign investment and domestic competition, curtailing subsidy, devaluing the currency to make exports internationally competitive, and attempting to integrate the Indian economy with the global economy. These measures are bound to have far-reaching repercussions on our concepts of socialism, self-reliance and political independence – concepts which have become part of our life since independence. It is a fact that only those countries have prospered in the last four decades who have adopted an environment of open market economy with little or no state control. However these countries have by and large become technologically dependent on the advanced countries for all innovation and development. Both India and the Soviet Union who charted the path of planned and controlled economy for achieving social justice did achieve technological self-reliance to a remarkable degree but with low growth rate, inefficieny, corruption in public places, high cost of goods and in the Indian case

– a parallel and black economy. Opening up the economy to multinational investment will definitely improve the quality of our products and their international competitiveness, lower our dependence on commercial borrowings from International agencies, and reduce the balance of payments deficit due to increased export earnings. It may also generate new employment, upgrade our existing manufacturing standards, improve productivity and bring greater choice of products to the Indian consumer. What is also possible is that it would dry up indigenous efforts at R&D, and foster greater technological dependence on the advanced countries even in areas of critical and political importance. It is of paramount importance for the scientific community to ensure that trade and industrial policy liberalisation are not at the cost of self-reliance in critical areas or the R&D effort in areas where we have the potential to excel at the international level. Unfettered flow of state-of-art know-how in high tech areas and large scale utilisation of our inherent skill at innovation can both be managed through a clever manipulation of market forces with little or no bureaucratic control. Let us hope that the Government is fully conscious of its responsibilities in this regard and decontrol does not lead to free-for-all and chaos in the technology market place.

My young friends, time and history have assigned you the unique responsibility of leading the country at a very critical phase of our existence. Your education and training at the School here have equipped you to use the tools of science and technology. You will be tempted to put the blame on the previous generations for the mess we have created in the affairs of the nation. I urge you to ignore this temptation, neither complain nor philosophise but boldly accept the onerous responsibility of facilitating a smooth and orderly transition of our country to the next century through dedication, integrity, hard work and commitment to our cherished values. You and your generation are going to be leaders of tomorrow who will dig out and bring to the surface the enormous capabilities of our people which have remained hidden and covered by centuries of misuse and neglect. Cast away the inferiority complex and the defeatist spirit embibed over centuries and replace it with a spirit of adventure and daring, a spirit of victory which would give the inheritors of this proud civilisation its rightful place under the Sun. The eyes of the whole country are on you. Don't fail them in this hour of trial.

G.B. PANT UNIVERSITY OF AGRICULTURE & TECHNOLOGY,
PANTNAGAR, DISTT. NAINITAL, U.P. 263145

ADMISSION NOTICE 1992-93
(For Post-graduate programmes at Hill Campus, Ranichauri)

A Competitive Entrance Examination shall be held on Sunday,the 12th July,1992, at PANTNAGAR only for admissions to the following Postgraduate programmes to be run at the Hill Campus of this University at Ranichauri (Tehri Garhwal).

M.Sc.Ag. (Horticulture,Vegetable Science, Seed Science & Technology) – 3 seats in each discipline.

Candidates holding B.Sc.Ag. & A.H./B.Sc.Ag./B.Sc.(Forestry)/B.Sc.(Horticulture)/B.Sc.(Biology) degrees with 55% marks in aggregate or equivalent O.G.P.A. and with not more than one-third division at High School and Intermediate levels.

For details, Information Brochure and Application form can be obtained by sending an account payee Bank Draft for Rs.15/- in favour of "Pre-Entrance Examination Cell Revolving Fund Account, G.B. Pant University of Agriculture & Technology, Pantnagar" on State Bank of India or United Commercial Bank Pantnagar Branch, with a self-addressed envelope of 10"x12" size bearing postage stamp of Rs.6/- or on cash payment at the Counter in the Admission Cell at Pantnagar on any working day.

Closing date : **20.6.92**, prescribed fee Rs.100/-.

Application forms will be on sale from 1st June,1992.

S.K. SHARMA
REGISTRAR AND COORDINATOR

CAMPUS NEWS

Distance Education, the Only Alternative

"During the last 45 years, there has been a phenomenal increase in the number of universities and colleges in the country, yet only less than 5% of the youth in the relevant age group had access to the facilities of higher education," said Prof. G. Ram Reddy, Chairman of the University Grants Commission (UGC). He was speaking after laying the foundation-stone for the School of Distant Learning & Continuing Education (SDLCE) at the Kakatiya University recently. Prof. Ram Reddy said that it was not a happy state of affairs when compared to several other countries where between 30 to 50% of the youth of the concerned age group were having access to institutions of higher education. Referring to the argument that there was no need to further increase the number of universities and colleges in the wake of large-scale unemployment, Prof. Ram Reddy commented that if this argument was accepted, it would create a situation of what he called 'aristocracy in education and democracy in politics.'

Any increase in the number of conventional institutions of higher education is not going to meet the requirements of ever-increasing student population in the country, opined Prof. Ram Reddy and added that the need of the hour was to search for alternatives and one such alternative was the distance mode of education.

Referring to the relative merits of the two systems, Prof. Ram Reddy maintained that the standards in the conventional system of education were not necessarily high as compared to the standards in the open learning system. He, however, cautioned that every effort should be made to maintain standards in the non-formal system of education in order to make it more credible and attractive.

Prof. Ram Reddy disclosed that the UGC was contemplating to reorient its funding policies based on the performance of universities and colleges. Institutions with better performance would get more money from the UGC, he said. He complimented the Kakatiya University for identifying a few areas for developing them into Centres of Excellence and assured the university of necessary help and support from the UGC.

Dr. K. Jayashankar, Vice-Chancellor of the Kakatiya University, informed that the UGC had cleared proposals involving an investment of Rs.290 lakhs for taking up developmental programmes during the VIII five-year plan which include starting of new specialisations, strengthening the library and laboratories, construction of buildings, etc. He further said that the university was contemplating to start a few specialisations like Rural Marketing, Rural and Tribal Development, Human Resource Management, Material Science, Bio-technology, Cytogenetics & Molecular Biology in addition to further strengthening the specialisations of Pharmacology and Medical Chemistry in the Department of Pharmacy.

The Vice-Chancellor said that the university was seeking assistance from the UGC for a few other schemes outside the plan allocation. Important among them were Centre for Telangana Development Studies, Centre for Women Studies, Centre for Sericulture Research & Development, English Language Teaching Centre, School of Distant Learning & Continuing Education and Functional Hindi at B.A. Hons. level.

Education for All by 2000 AD

The Ministry of Human Resource Development proposes to launch a national mission for universalisation of elementary education by 2000 AD under the revised education policy.

The programme is aimed to ensure that free and compulsory education of satisfactory quality is provided to all children upto 14 years of age before the country enters the twenty-first century.

The working group on elementary education at a recent meeting of the Central Advisory Board of Education was unanimous that the gap in implementation of the policy should receive priority attention. Suitable modifications should be carried out in the programme of action to reflect the revised policy initiatives.

The targets for universalisation of elementary education during the Eighth Plan would emphasise on access participation and achievement. These would comprise universal enrolment of all children including girls and SC/ST children, provision of primary school for all children within one km of walking distance and non-formal education facility for school dropouts working children and girls who cannot attend school.

Other measures include reduction in dropout rate to 20 percent and 40 percent at the end of primary and upper primary stage, improvement of school facilities by revamped operation blackboard and achievement of minimum levels of learning.

The strategy will be to adopt an approach with focus on preparation of area-specific and population-specific plans for universalisation of elementary education. It has been found that within each state there are areas and districts which are almost near universalisation. As a result statewise programmes may not be able to narrow the disparities further. Therefore, in the Eighth Plan districtwise plans for universalisation will be prepared by each state.

Districts will broadly be categorised into low literacy, high literacy and total literacy campaigns. In the high literacy districts achieving universalisation will mainly be a matter of improving educational management to ensure coordination improved supervision and effective monitoring.

In the total literacy campaign districts, community mobilisation will be utilised. About 250 districts will be included in this category, in the low literacy districts, the main thrust will be on measures for access and participation with focus on rural and tribal girls. The main strategy will be to involve the community in running of schools.

Varsity Administrators Meet

The Chairman of the University Grants Commission, Dr. G. Ram Reddy, said that there was a proposal to start an institute to train the university administrators as training was an important component in the management of the universities. He was inaugurating a two-day third national convention on Resource Crunch in Higher Education (emerging issues and trends) organised by the Association of University Administrators in Pondicherry University recently. Dr. Reddy said the universities should take a critical look at the pattern of expenditure and lay down norms in the matter.

While conceding that there could be no escape from the State support to the universities, Dr. Reddy said there had been increase in the number of students, staff, research activities and launching of welfare measures for the universities. Each university had the challenges unique to it. The income was not adequate and hence the resource crunch.

The universities should generate their own resources and rationalise expenditure. He suggested charging of differential fees on the students. There was no incentive to universities to raise the income.

The UGC would communicate its point to the State Governments that the resources raised by the universities should not be deducted from the grants made available to them by the States. He said Registrars played an important role in improving the universities.

The Lt. Governor of Pondicherry, Dr. Har Swarup Singh, in a keynote address called for tie-ups between institutions and industrial units. Judging by the present conditions there was very little scope for resource mobilisation in the universities. As the Government was committed to move towards privatisation it was argued that the universities should be allowed to exercise full cost option despite its serious political implications.

Dr. Singh expressed his concern over the desire to create a large infrastructure that would lead to bloated bureaucracies and teaching and research faculties. "We suffer from institution building syndrome and we also have a craze for collecting costly and fancy equipment without regard to its usefulness," he said.

The Lt. Governor said there was a need to equip the university authorities with updated training and orientation so that they could provide a forum for any meaningful discussion on planning for development and reform. The outdated University Acts which suffered from many inadequacies and were unequal to the task ahead should be replaced, he said.

Dr. A. Gnanam, Vice-Chancellor of Pondicherry University, who presided, said there should be proper investment on higher education. An endowment fund should be set up to help the universities manage their affairs.

Dr. Brij Bhushan, Secretary of the Association of University Administrators, said professionalism was an important component in the management of universities.

Nearly 30 delegates from various universities, technical institutions and other organisations attended the conevntion.

Scheduled Castes and Social Justice

The Sharanabasveshwar College of Arts, Gulbarga, organised a three-day seminar on "Scheduled Castes and Social Justice" to commemorate the birth centenary of Dr. Babasaheb Bhimrao Ambedkar. The seminar was organised with the financial assistance from the University Grants Commission, New Delhi.

The objectives of the seminar were (i) to highlight the role of great social reformers such as Lord Basawa in 12th Century in Karnataka and leaders like Mahatma Gandhi and Dr. Ambedkar in abolishing the inhuman practice of untouchability; and (ii) to evaluate, examine and assess the policies and programmes adopted by the Government of India to improve and raise the socio-economic status of the scheduled castes.

Inaugurating the seminar Dr. Sharanabasawappa Appa, the President of the Society, pointed out that the practice of untouchability in modern India had become more a matter of prestige than a ritual value. He drew the attention of the audience to the fact that members in towns and cities interact freely without caste feelings. But they become caste conscious as soon as they enter their house. He hinted that there was a tendency to stick to hollow caste value viz. untouchability in a disguised from in urban areas. He advised that unless people opened their eyes to the naked reality of fastly changing situation, it would be difficult to bridge the gap between the scheduled and non-scheduled castes.

Sri A.V. Katti, who was the chief guest, pointed out that the SCs had even today remained a poor lot. He called for a new approach to ameliorate their conditions.

Sri. S.G. Melkundi, Principal of the College, in his keynote address surveyed the social, economic and political progress of the SCs since Independence and pinpointed the weaknesses and failures of government measures in uplifting the SCs. While upholding the policy of reservation and its extension for SCs for a few more years in future, he, however, stated that reservations alone could never be a permanent solution. He also made it clear that the continued and undue protection of a group or community would act as a demotivating force in the long run. Ultimately, he said, it was the SCs themselves who must find ways and means to improve their social and economic lot and join the national mainstream.

The topics discussed at the seminar included : (1) Dr. Ambedkar and the Constitutional safeguards for SCs & STs; (2) The untouchables and Apartheid; (3) Dr. Ambedkar and Human Rights with reference to untouchables; (4) Socio-economic Progress of the SCs since Independence; (5) Scheduled Castes Women and Social Justice; (6) Gandhiji and Untouchability; (7) Basawa and Untouchability; (8) Politics of Reservation; (9) Scheduled Castes and Social Justice; and (10) Scheduled Castes and Rural Development : A Case of IRDP.

After detailed deliberations, the following resolutions were adopted at the seminar :

(1) Untouchability should be taken as the sole criterion for defining and classifying a caste as SC. All those non-untouchable castes which have been included in the SC list should be immediately dropped by a constitutional amendment.

(2) The policy of constructing hostels exclusively for SC students goes against the secular values of India. Instead, hostels must be open for all castes so that an atmosphere of communal harmony could be fostered.

(3) Schemes and programmes meant for SCs should be implemented without undue delay.

(4) Stricter measures should be taken to prevent atrocities on Harijans, specially in rural areas.

Distance Education Programme for Gulf Countries

The Madurai Kamaraj University proposes to introduce distance education programme in the Gulf countries to help lakhs of non-resident Indians and others. According to Dr. M.D.K. Kuthalingam, Vice-Chancellor, clearance had been obtained for the programme from the University Grants Commission and the Reserve Bank of India. The Indian Embassy in UAE had come forward to help in the conduct of the university examinations.

The Vice-Chancellor said correspondence education would be introduced to the Gulf through Abu Dhabi Educational Institute recognised by the Ministry of Education of UAE. Mr. M.K. Jawahar of the Institute would act as the regional coordinator of the Institute of Correspondence Courses and Continuing Education of the university.

Competent Management Assistants Programme

Inaugurating a 'competent management assistants programme' held under the auspices of the Centre for Entrepreneur Development assisted by Friedrich Naumann Foundation of Germany, the Vice-Chancellor of the Madurai Kamaraj University, Dr. M.D.K. Kuthalingam said it was a good idea that fresh graduates numbering 30 including eight women were being trained so that they could be developed to have orientation towards small industries. Thus, small industries could get the qualified and trained manpower.

Referring to the various structural and other facilities created by the Central and State Governments for the promotion of small industrial sector, he said the quality of the industry would depend ultimately on the quality of manpower employed. Under the circumstances, the proposed course running to about two months would prove to be beneficial and the university on its part would be prepared to render all assistance in this direction.

Women Geoscientists in National Development

The Indian Geological Congress, in collaboration with the Association of Geoscientists for International Development, proposes to organise an International colloquium on "Role of Women Geoscientists in National Planning and Development Programmes" at New Delhi from November 23-25, 1992.

The colloquium aims (1) to spread the culture and skill of geosciences and geotechnology among the talented women of developing countries; (ii) to identify the problems of those women, who have been working and are desirous to work as professionals/scientists in the area of geosciences; (iii)to make women conscious of the crucial roles they can play virtually in all phases of human endeavours; (iv) to identify the social problems stemming from the age old social and religious barriers of women of the developing countries; (v) to provide a forum to women geoscientists from Asian countries to present their view points on the whole question of female education, employment and participation in the earth-science-related national development programmes; and (vi) to create a cell of women geoscientists of the developing countries for promoting their cause.

In the technical sessions the focus of discussion would be on (1) Current status of women geoscientists in the hierarchy of earth-scientists in developed and developing countries; (ii) Problems of women students of earth sciences in developing countries; (iii) Promoting feminisation in the profession of geoscientists – ways and means; (iv) Triumphs and tribulations of inservice women geoscientists; and (v) Role of women geoscientists in national development programmes.

Further information may be had from Prof. O.P. Varma, Hony. Editor and Programme Convener, Indian Geological Congress, Deptt. of Earth Sciences, University of Roorkee, Roorkee-247 667

Chinese Press Delegation at Osmania Varsity

A five-member Chinese Press Delegation recently visited Communication & Journalism Department of the Osmania University. The delegation comprising office-bearers of All China Journalists Association, the Editors drawn from Economic, International & Youth Newspapers of China was received in the Dept. by Prof. S. Bashiruddin, Head of the Dept., which spent a two-hour interaction session with the faculty and students.

According to Mr. Tangfei, leader of the delegation, the Chinese newspaper men do not perceive domination by western news agencies of their media contents of newspapers, radio and television, Though Hsinhua News Agency has nearly 1,000 newsmen and sub-editors spread all over the world, during the Gulf war the Chinese media had to depend upon the western viewpoint which was later corrected by Husinhua Visiting Correspondents, the visiting Chinese newmen added.

The Chinese newspapers have only about less than 15% of advertising contents but are largely circulated among laymen, workers, students, women, etc. For a total population of 1.1 billion Chinese people, of whom 900 million are literate, there is a total daily circulation of 70 million copies in China, according to the visiting journalists, who comprised Mr. Li Zhi Ping, President & Editor in Chief of Chinese Writers and Journalists Association, Mr. Pan Ping, Editor, Yangcheng Evening News, Ms. Yang Li of All China Journalists Association and Mr. Guan Ling of the Economic Journal from Shanghai.

Journalistic Training in China

Journalists in China undergo specialised training during summer in different aspects of media offered by institutes and university departments of Journalism.

Research on newspapers is mostly done by journalistic associations and other media professional organizations.

According to members of the delegation which recently visited the Osmania University, in China, the Press can criticise wrong implementation of policies by institutions but not the policy itself.

In view of large circulations and fewer number of pages with very little advertising, newspapers are largely self-supporting.

Ranganathan Centenary Celebrations

The birth centenary of Dr. S. R. Ranganathan, the father of Library Science in India falls on 12 August, 1992. Elaborate plans are being drawn up to celebrate the event in a most befitting manner. The main theme of the plenary session of the IFLA General Conference being held in New Delhi from August 30 to Sept.5, 1992, is on Ranganathan. It is also proposed to organise an exhibition on "100 years of Indian Librarianship" during the conference.

A broad based International Committee has been constituted with Prof. P. N. Kaula and Dr. V. Venkatappaiah as Working Chairman and Secretary respectively to publish Ranganathan Centenary Volume on "International and Comparative Librarianship and Information Systems". Herald of Library Science and other professional journals propose to publish special centenary number.

As a first step, the Committee has brought out "A Librarian Looks Back : An Autobiography of Dr. Ranganathan with an evaluation of his Life and Work" by P. N. Kaula. Another title "Indian Library Manifesto" by Dr. Ranganathan containing his vision and plans for the library development of India has also been published. Further details about the celebrations can be had from Dr. V. Venkatappaiah, Secretary, 28-1-78 Santi Nagar, Eluru - 534 006 (AP).

A. P. State Archives Regional Office

Dr. K. Jayashankar, Vice-Chancellor of the Kakatiya University, inaugurated the first ever Regional Office of the Andhra Pradesh State Archives on the university campus. Speaking on the occasion Dr. K. Jayashankar said that the opening of a branch of the State Archives on the campus was a good example of inter-institutional collaboration and it would go a long way in strengthening the research activity. He expressed the hope that the Regional Office of the State Archives would form a nucleus of research eventually to cover the whole gamut of Social Sciences.

Dr. Jayashankar advised the students and research scholars of Social Sciences and Languages to make use of the valuable material available in the records of the Archives.

Dr. H. Rajendra Prasad, Commissioner of the A.P. State Archives, Hyderabad, explained in detail the priceless collection of documents of all kinds and how they preserved in the vaults and stacks of the State Archives. He said, his department was striving hard to collect and catalogue scientifically the manuscripts from various parts of the state for the benefit of the researchers.

Dr. Jayashankar was taken round the manuscripts on display in the Centre. He complimented the personnel of the department for the excellent work done in procuring the age old manuscripts which would be of immense value to the scholars in their research pursuits.

Prof. A. Shankaraiah, Registrar of the University said that the Regional Centre would provide a meaningful interaction between the academicians of the Social Science Faculty and the State Archives for a fruitful research.

Seminar on University System

The Academic Staff College, Gorakhpur University, organised a seminar of Principals and Heads of the Departments from May 6-9, 1992 on "University System: Problems and Solutions". The seminar was inaugurated by Prof. V.S. Pathak, Vice-Chancellor, Gorakhpur University and presided over by Prof. Hari Shanker Srivastava, former Head of the Department of Modern & Medieval History, Gorakhpur University.

Inaugurating the seminar Prof. Pathak deplored the double standards prevailing in the field of higher education. While central universities had funds from the government overflowing, state universities especially in U.P. were passing through financial crises, he observed. Comparing per capita expenditure on students in central and state universities Prof. Pathak said that government was spending more money per student in central universities than in state universities. He pleaded for a fair deal at the hands of the government in the matter of allotment of funds and meeting deficit. Dwelling upon the university system Prof. Pathak said that it presupposes active cooperation and whole-hog involvement of teachers, students and employees. It was only with their cooperation that teaching could be organised, indiscipline controlled and finances managed.

Professor Hari Shanker Srivastava in his presidential address pleaded for University autonomy and exhorted students, teachers and employees to make the university system sensitive to the needs of society.

Prof. P.S. Pandey, Director, Academic Staff Colleges, in his welcome address threw light on the aims and objects of the seminar.

Prof. Padmanabhan Honoured

Prof. K.A. Padmanabhan of the Department of Metallurigical Engineering, Indian Institute of Technology, Madras, has been elected an honorary academician of the Bashkerian Academy of Sciences of the Russian Federation for his outstanding contributions to superplasticity. He becomes eligible for the title of "Honorary Academician of Bashkeristan" by virtue of his election.

The institute of superplasticity — only one of its kind in the whole world — is situated at Ufa, the capital of Bashkeristan where more than 400 scientists and engineers work on this area.

News from UGC

Focus on Women Studies

The University Grants Commission is asking the women study centres/cells functioning in 28 universities to take up programmes for building awareness about issues relating to women on a larger scale and, if feasible, additional financial assistance will be extended to them for this purpose. Under its adult education programme, the Commission proposes to pay special attention to promotion of literacy and continuing education including vocational education among women through Jana Shiksha Nilayam (JSN) and Continuing Education Centres.

These programmes have been incorporated in an Action Plan designed by the UGC in pursuant to the National Perspective Plan for Women for 1988-2000. Under the Action Plan, the Educational Media Research Centres (EMRCs) and the Audio Visual Research Centres (AVRCs) will be advised to prepare programmes concerning women's education for telecast by the Doordarshan in the Countrywide Classroom programme.

In addition, the UGC has already taken various steps for promoting education of and about women. The minimum enrolment required for the women's colleges to be eligible for the UGC developmental grants have been reduced to 150 as compared to 250 for general colleges. Similary, the number of faculty members required for a women's college for the assistance purpose is 5 whereas for the general college it is 10. Further, UGC assistance for boys' hostel of colleges and universities is 75 percent but for a girls' hostel the UGC assistance is on 100 percent basis. 40 positions of Research Associateship are earmarked for women scholars to enable them to pursue post Ph.D. research on part-time basis. Under the SAARC Fellowship scheme, preference is given to women scholars in selection. So far about 35 percent of the scholars selected were women.

News from Abroad

Attracting Japanese Students

The growing competition for Japan's prospective students is encouraging many of the country's universities and junior colleges to invest in new sports facilities and dormitories.

With population changes likely to result in a dramatic slump in the number of university and college applicants, many institutions are facing the stark choice of enrolling more students or going out of business.

Several surveys have shown that the quality of the sports, recreational and living amenities being offered by institutions of higher education has become an important factor in a student's choice of university or college.

The Science University of Tokyo has built tennis courts, a golf driving range and a ski slope to tempt students to the university's Oshamanbe campus on the northern island of Hokkaido. Officials at the university are also drawing prospective students'attention to other attractions in the local area including the nearby hot springs.

On the southern island of Kyushu the Kumamoto, Institute of Technology, has created a new dormitory which offers single rooms equipped with refrigerators, cooking facilities and cordless telephones.

Hagi Women's Junior College has moved to a new campus on an island in the Inland Seas which offers comfortable dormitories along with tennis courts, swimming pools and a golf-range.

Himeji Gakuin Women's Junior College offers students a new "campus leisure land" featuring a luxury "biogarden" relaxation and eating area.

Japan's highest-ranked university, the University of Tokyo, is trying to remain ahead of the competition by planning a number of new dormitories including one for international students in the capital's Mitaka District.

ACU Congress 1993

Coinciding with the centenary celebrations of the University of Wales, the Association of Commonwealth Universities will hold its quinquennial Congress at the University College of Swansea in 1993 with global environment high on its agenda. The congress was last held in Perth, Western Australia, in 1988.

It will attempt to develop new policies for teaching and research on the conservation and restoration of the natural environment, the cultural heritage, social and economic change and urbanisation.

University of Wales president, former Prime Minister Lord Callaghan, said: "The congress is expected to set a worldwide agenda for education's role in preserving the environment through new approaches to teaching and research".

BOOK REVIEW

Distance Education

P.C.Bansal*

Inayat Khan, Ed. Distance Education : Some Readings. Delhi, Amar Prakashan, 1991. Ppxii + 206. Rs.250/-

Inayat Khan's Distance Education is a collection of 15 papers organised under six sections: Concept and Potential of Distance Education (4); Planning and Management of Distance Education (2); Student Support Service in Distance Education(3); Communication Technology in Distance Education (2); Teaching English in Distance Education system(2); and Faculty needs of Distance Education(2). Education is a life long process and distance education is characterised by flexibility. Both developed and developing countries have found in distance education, a supplementary channel of higher education. The establishment of British open University in 1969 was a significant development. At home, the setting up of Indira Gandhi National Open University is an important landmark. The author hopes that the book will be useful to students and researchers of distance education.

In the opening section, B. Holmberg writes that distance education is characterised by non-contiguous mediated communication called didactic conversation. It is hypothesized that the stronger the character of the guided didactic conversation, the stronger the student feelings of personal relationship between them and the supporting organisation; the stronger the student feelings that the supporting organisation is relevant to them, the greater their personal involvement; the stronger the students' feelings of personal relation to the supporting organisation and of being personally involved in the study matter, the stronger the motivation and more effective learning (p.18). The completion rate correlates with turn around time and also with encouraging reminders on occasions when students have been passive overtime. N.Jose Chandra suggests that an appex body may regulate and control all Distance Education system institutes. It will help in controlling the quality among them.

K. Valicha opines that in Distance Education system, the student journeys through a flexible academic system on his way to acquiring a degree, gathering knowledge suited to his special needs and abilities. S.S. Chib writes that there is an uneven distribution of distance education institutes in the country. There is a need for coordination both at the central and states level to improve the health of non-formal education in the country. Chib opines that affiliation for professional and job oriented courses with the universities will not be conducive for vertical growth and horizontal expansion of distance education institutes.

In Plannning and Management of Distance Education, Rudar Dutt writes that new innovations and flexible designs should be created in distance education. Moreover, factors inhibiting growth of distance education are analyzed and remedial action suggested. It is stressed that if we want to salvage distance education from its image of substandard system, then it is very essential that we must lay down certain norms of planning. There is a need to evolve a national policy regarding the role of University Grants Commission, Indira Gandhi National Open University and Directorate of Correspondence Courses in distance education. R.S.Rath writes that the management of an institute of distance education as part of the larger university system has to carefully nurture its quality and build and protect autonomy.

In student support service section, T. Rekkedal points out that individual guidance over telephone would appear to be valuable as a medium of fulfilling Gagne's teaching functions. In one experiment, students receiving a monthly telephone call from their tutor had higher completion rate. But, neither measures of study success or student attitude should statistically significant differences between the experimental and control group. The crucial question is how telephone tutoring can be organised in a pedagogically sound and effective way in distance education. In a paper "Beyond Interaction and Independence", B.N.Koul writes that in student support services independence is the ultimate objective of enlightened mankind and interaction is the global effort to achieve the objective. To achieve the objective of independence, the curriculum has to be more flexible and locally relevant. To achieve this we

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Formerly Scientist (Psychology), Ministry of Defence, B-58 Inderpuri, New Delhi-110012.

need interaction at micro level. For this cooperation and coordination between various distance education institutions is desirable.

In a study "Background, learner orientations and interpersonal relations of off-campus trainees", A.K.Gupta and R. Arun report that success in distance learning is likely to be determined by the background characteristics, expectations and competence of distance learners. The authors suggest that further research is needed on the role of different psycho-social educational factors pertaining to learners in maximizing success in distance learning situation.

In Communication Technology in Distance Education, T. Rekkedal and M.F.Paulson discuss about the Computer Mediated System (E K K O). The crux of the computer conference is the sending, reading and responding to comments in a manner public to all members of the conference. The most exciting challenge in the long run will be to create new and more effective learning situations. A two way communication by electronic mail may be used in the guidance of individual student projects and introduction of group discussion. The authors note that there is still a long way to go before we know how to design learning based on computer conferencing. B.K.Sinha writes that communication media can be effectively involved in both curricular and environmental areas. The success of distance education depends on the use of alternative media.

In the section on Teaching of English in the Distance Education, R.K.Bansal writes that foundation course in English at Undergraduate level should aim at improving the student's proficiency while the elective course may deal with particular aspects of study of language and literature. The proficiency in English can be improved through better course material, efficient counselling and tutorial facilities. Inayat Khan points out that the aim of teaching prose is detailed understanding of the text; for poetry, it is understanding and appreciation of the beauty of the piece of art. In drama, student should be able to comprehend and appreciate the dialogue, stage technique, character and plot on the whole. From the analysis of 46 lessons, the author found that the learners want that the lessons should be written in simple language, should be able to improve the knowledge of English and use conversational style.

In Faculty Needs of Distance Education section, S.Bhatnagar makes out a case for a well qualified faculty for the institutes of distance education. For this norms for determining the optimum size of the faculty should be laid down. For undergraduate department, the faculty may comprise one professor, two readers and three lecturers. If postgraduate section is added, the faculty will have two professors and four readers in addition to undergraduate staff. The distance education system must be treated at par with the conventional system especially in matter of State support. Inayat Khan writes that almost no attention has been given to the training of teachers in distance education. He has examined some programmes in different countries about the training of teachers for distance education. A multi -media approach is required in the preparation and presentation of self instructional material. It is hoped that Diploma in Distance Education programme of Indira Gandhi National Open University can go a long way to establish distance education on firm footing.

In short, the present book along with Teaching at a Distance(1989) also edited by Inayat Khan will be of interest to lovers of distance education. There is a need for a Handbook on Distance Education and Inayat Khan may come out with such a book in the near future.

BOOKS RECEIVED

1. Armstrong, Michael. **Handbook of human resource management.** New Delhi: Aditya Books, 1990. 260p. Rs. 295.00 (HB).

2. Bell, F G. **Fundamentals of engineering geology.** New Delhi: Aditya Books, 1992. 648p. Rs. 395.00 (HB).

3. Maheshwari, B L and Sinha, Dharni, P.Ed. **Management of change through human resource development: Papers presented at the International Conference of the National HRD Network, Hyderabad, Feburary 1991.** New Delhi: Tata McGraw-Hill, 1991. ix,303p. Rs. 150.00 (HB).

4. Mukerji, K G and others. **Recent developments in biocontrol of plant diseases.** New Delhi: Aditya Books, 1992. 195p. Rs. 350.00 (HB).

5. Pande, S S and Ramakrishnan, N. Ed. **Technologies for competitive manufacturing: Proceedings of the 14th All India Machine Tool Design & Research Conference, 19-21 December, 1990 held at Indian Institute of Technology, Bombay.** New Delhi: Tata McGraw-Hill, 1990. xii,632p. Rs. 450.00 (HB).

6. Rubino-Sammartano, Mauro. **International arbitration law.** New Delhi: Aditya Books, 1992. xii,537p. Rs. 650.00 (HB).

7. Sawhney, S C. **Productivity management: Concept and techniques.** New Delhi: Tata McGraw-Hill, 1991. xii,275p. Rs. 150.00 (HB).

8. Seshadri, C and Pandey, J L. Ed. **Population education : A national source book. V I.** New Delhi: NCERT, 1991. xiii,404p. Price not stated.

9. Singh, R P. **Electromagnetic waves and fields.** New Delhi: Tata McGraw-Hill,1991. xvi,538p. Rs. 54.00 (PB).

10. Virdi, Surinder Singh. **Documentary letters of credit and UCPDC.** New Delhi: Tata McGraw-Hill, 1991. xi,188p. Rs. 150.00 (HB).

CALENDAR OF EVENTS

Proposed Date of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/ Officer to be Contacted
July 28-30, 1992	Fourth International Conference on Assessing Quality in Higher Education	To promote awareness of current issues and perspectives on the assessment of quality in higher education	University of Twente Enschede, The Netherlands	Mr. Trudy W. Banta Director, Center for Assessment Research and Development, The University of Tennessee, 1819 Andy Hold Avenue, Knoxville, Tennessee 37996-4350
August 11-16, 1992	8th World Congress for Rural Sociology	Theme : Rural Society in the Changing World Order	International Rural Sociology Association, USA	The Pennsylvania State University, 306, Agricultural Administration Building, University Park, Pennsylvania - 16802
August 16-19, 1992	55th Annual Meeting of the Rural Sociological Society	Theme : Rurality and the Global Environment	Rural Sociological Society, USA	-do-
August 25-28, 1992	Second Afro-Asian Psychological Congress	Theme : Psychology for Social Development and Human Welfare	The Chinese Psychological Society	Prof. Wang Su, Congress Secretariat, Department of Psychology, Peking University, Beijing-100871
August 26-28, 1992	Second International ISKO Conference on Cognitive Paradigms in Knowledge Organisation	To provide a forum for scholars working in the field of knowledge organisation	Madras Library Association in collaboration with Sarada Ranganathan Endowment for Library Science and University of Madras	Mr. S. N. Kumar Conference Secretariat, 5, Sivaganga Road, Madras-600 034
September 21-23, 1992	Sixth Annual Conference of the Asian Association of Open Universities	Theme : The Role of Open Universities in promoting Education for All	Korean Society for the Study of Distance Education	Dr. In Sung Jung, Secretariat, AAOU 1992 Annual Conference C/O Korea Air and Correspondence University 169, Dongsung-Dong, Chongro-Ku, Seoul 110-791, Korea
October 26-31, 1992	Third IAU Mid-Term Conference to be held at Alexandria, Egypt	Theme:Adaptation of University Management Structures and Strategies for New Requirement	International Association of Universities (IAU), France	Dr Franz Eberhard, Secretary General, International Association of Universities, 1, rue Miollis, 75732 Paris Cedex 15 France
November 9-13, 1992	16th World Conference on Distance Education for the Twenty-First Century	To give a view of the aspects of development in Distance Education in the Twenty-First Century	International Council for Distance Education, in cooperation with Sukhothai Thammathirat Open University (STOU), Thailand	Mr. Bruce Scriven, Program Chair – 16th World Conference of ICDE, Queensland University of Technology, Locked Bag No. 2, Red Hill Queensland 4059, Australia
November 18-20, 1992	VIII Carbohydrate Conference	Exchange of information on recent advances in Carbohydrate research	The Association of Carbohydrate-Chemists and Technologists (India) in collaboration with Regional Research Laboratory, Trivandrum	Dr. Ashok Pandey, Convener or Dr. K.C.M. Raja, Organising Secretary, VIII Carbohydrate Conference, Regional Research Laboratory, Trivandrum-695019
December 14-31, 1992	Short Term Course on Polymeric Materials Product Technology (PMPT-92)	To provide an insight into the specialised behaviour of Polymeric Materials.	Materials Science Centre, IIT, Kharagpur	Dr. Ajit K. Banthia Coordinator, PMPT-92, Materials Science Centre, Indian Institute of Technology Kharagpur - 721302

THESES OF THE MONTH

A list of Doctoral Theses accepted by Indian Universities.

PHYSICAL SCIENCES

Mathematics

1. Rao, Ramani. **Rational finite elements: Some constructive aspects convergence properties.** Durgawati. Dr (Smt.) P L Powar, Department of Mathematics, Rani Durgawati Vishwavidyalaya, Jabalpur.

2. Satapathy, Biswanath. **Invariant means and infinite matrices.** Utkal.

3. Singh, Satyendra Narayan. **Approximation of linear polynomial operators.** Durgawati. Dr Arun Kumar, Department of Mathematics, Rani Durgawati Vishwavidyalaya, Jabalpur.

Physics

1. Baharvand, Abdul Rahim. **Spectroscopic studies of some hydroxyl-derivatives of naphthalene and their radical cations.** Delhi.

2. Das, Narayan Chandra. **On the development of microprocessor based monitoring systems for electrical engineering applications.** Calcutta.

3. Ghosh, Dipak. **Phase transitions in discotic liquid crystals: A molecular mean field study.** Calcutta.

4. Papaiah, G. **Elastic properties of polycrystalline yttrium iron garnets and their temperature and magnetic field dependence.** Osmania.

5. Rajasekharan, K. **Studies on the chanelling of fast particles through crystals.** Calicut. Dr K Neelakandan, Department of Physics, University of Calicut, Calicut.

6. Telang, Mrunalini Kashinath. **Investigations into the X-ray L3 absorption spectrum of gadolinium in some of its system.** Nagpur. Prof P C Deshmukh, Department of Physics, Nagpur University, Nagpur.

Chemistry

1. Das, Srabani. **Structural studies of plant polysaccharides from the seeds in Indian medicinal plants.** Burdwan. Dr Pradyot Ghoshal, Reader, Department of Chemistry, Burdwan University, Rajbati.

2. Garg, Archana. **Studies of azomethine derivatives of some of the later transition elements.** Rajasthan. Prof J P Tondon, University Department of Chemistry, University of Rajasthan, Jaipur.

3. Ghoshray, Sudipta. **Studies on some reactions and compositions of certain lipids.** Calcutta.

4. Gupta, Akhilesh Kumar. **Synthetic studies on polarized ketene S,S-S,N-and N,N-acetals.** NEHU. Dr H Junjappa, Department of Chemistry, North-Eastern Hill University, Shillong.

5. Gupta, Vandana. **Synthetic and spectral investigations of some heterocyclic compounds containing nitrogen and sulphur.** Rajasthan. Dr S K Jain, Assoc Prof, Department of Chemistry, University of Rajasthan, Jaipur.

6. Harogoppad, Shivaputrappa Basavanneppa. **Liquid transport through polymer membrane.** Karnatak. Dr T M Aminabhavi, Reader, Department of Chemistry, Karnatak University, Dharwad.

7. Jha, Krishna Kumar. **Potentiometric studies on the complexation behaviour of phenanthrenequinone mono-(1-pyrimidyl) and 2-hydroxy-1-naphthaldehyde mono-(2-pyrimidyl) hydrazones with bivalent and trivalent metal ions.** Delhi.

8. Khamparia, Narendra Kumar. **Effect of phosphorous and zinc and their interactions on yield and uptake of these nutrients in soybean and gram crops on medium black soils of District Sagar deficient in zinc.** H S Gour. Dr K S Pitre, Department of Chemistry, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

9. Kishan Prasad, V S. **Studies on poly (esterimides/imides): Their synthesis, characterization and evaluation as coating materials.** Osmania.

10. Mahak Singh. **Synthesis and solution structures of dehydropeptides.** Delhi.

11. Mathew, Beena. **Crosslinked polymer-supported ligands as complexing agents for metal ions: Effect of the variables of macromolecular structure on complexation.** Mahatma Gandhi. Dr V N Rajasekharan Pillai, Prof, School of Chemical Sciences, Mahatma Gandhi University, Kottayam.

12. Mukesh Chandra. **Some studies of thermal decomposition of metal lactates.** Magadh. Dr R K Verma, Reader, Department of Chemistry, Magadh University, Bodh Gaya.

13. Padhy, Rajendra. **Graft copolymerization on to synthetic fibres.** Berhampur. Dr P L Nayak, Reader, Department of Chemistry, Revenshaw College, Cuttack.

14. Patel, Bhupeshkumar Mohanlal. **Physico-chemical studies of methyl methacrylate and poly (methyl methacrylate) solution in different solvents.** S Gujarat. Dr S L Oswal, Reader, Department of Chemistry, South Gujarat University, Surat.

15. Patil, Indira Damodar. **Photo degradation of polymers.** Nagpur. Dr M C Gupta, Reader, Department of Physical Chemistry, Nagpur University, Nagpur.

16. Patro, Mata Dambarudhar. **Mechanism of redox reaction.** Berhampur. Dr A K Panigrahi, Reader, Department of Chemistry, Khallikote College, Berhampur.

17. Prasad, D S N. **Dynamics of atmospheric acid generation reactions.** Rajasthan. Dr K S Gupta, JK-14, Sector One, Jawahar Nagar, Jaipur.

18. Ray, Purna Chandra. **Synthetic and biomimetic studies of selected steroids.** Delhi.

19. Sahu, Kedar. **Effect of substituents and environment on the spectral and thermodynamic behaviour of some pyrimidine derivatives.** Sambalpur. Dr B K Mishra, Lecturer, Department of Chemistry, Sambalpur University, Jyoti Vihar, Burla.

20. Sarma, Girish Chandra. **Kinetics of oxidation of some aromatic hydrocarbons by quinolinium dichromate.** NEHU. Dr M K Mahanti, Department of Chemistry, North-Eastern Hill University, Shillong.

21. Sharma, Sunil Kumar. **Molecular structures of naturally occurring 2-phenyl-4H-1-benzopyran-4-ones and synthetic and spectral studies on new 1,3-diphenylprop-2-enones.** Delhi.

22. Siddiqui, Mohammad Salman. **Synthesis, ion-exchange behaviour and some novel applications of inorganic materials.** AMU. Dr K G Varshney.

23. Srinivasan, V N. **Studies on zinc phosphate chemical conversion coating.** Osmania.

24. Swain, Ranjan Kumar. **Some physico-chemical studies on ionic association of N-methylpyridinium iodides in aqueous and aqueous alcohol mixures.** Sambalpur. Dr S Behera, Reader, Department of Chemistry, Sambalpur University, Jyoti Vihar, Burla.

25. Vardhan, Anand. **Phytochemical studies of Prunus species and spectral studies on new 3-methylbut-2-enylated 1,3-diphenylprop- 2-enones.** Delhi.

Earth Sciences

1. Arora, Mukesh. **Geology, geochemistry and tectonic setting of conglomerates and quartzites of Baba Budan schist belt, Karnataka Nucleus, India.** AMU. Prof S M Casshyap.

2. Hari, K R. **Mineralogical and fluid inclusion studies of primary constituents of mafic and ultramafic rocks of Pavagadh Hill, Deccan Traps of Gujarat.** Vikramt. Dr A V Chatterjee, Head, Department of Geology, Vikram University, Ujjain.

3. Patel, Ramesh Chandra. **Structural geometry and strain patterns of the collision zone, Zenskar, NW Himalaya.** Roorkee.

4. Ranganathan, K. **An orientation soil geochemical survey over the oil and gas deposits in Kaza area, Krishna District, A P.** Osmania.

Engineering & Technology

1. Delawar Hussain. **Hydrodynamic leading on vertical lift gates.** Roorkee.

2. George, K J. **Development and the uses of accident severity measures for improvement of road geometrics.** Calicut. Dr B N Nagaraj, Department of Civil Engineering, Regional Engineering College, Calicut.

3. Mitra, Subhash. **Study on longterm behaviour of underground powerhouse cavities in soft rocks.** Roorkee.

4. Patra, Uma Charan. **Development of high strength low alloy steels and optimisation of mechanical properties through control of structures.** Sambalpur. Dr R I Ganguly, Prof, Department of Metallurgical Engineering, Regional Engineering College, Rourkela.

5 Saibabu, Janaswamy. **Some heat transfer aspects of laminar and turbulent falling liquid films on horizontal tubes and vertical surfaces.** Andhra.

6. Shalabey, Mostafa E E. **A study on salt water transport towards a pumping well.** Roorkee.

7. Sriniwas Reddy, B. **Dynamic wind effects on antenna structures.** Roorkee.

COMMUNICATION

Restructuring Curriculum

R.S. Trivedi in his 'Restructuring Curriculum at Higher Education Level' (*University News,* April 13, 1992) has observed : 'It is only the university that can provide R & D to education industry'. Thus it is obvious from what he has written that he regards education as an industry which has to bring about human resource development so that personnel for a Second Revolution accelerated by (i) Micro-electronics, and (ii) Bio-technology are made available. The implication is that such a revolution which is already in an advanced stage in the West is also desirable in our country.

Here Trivedi is mainly concerned about the role of higher education in bringing about economic development of the country. His article is silent about the role of education in perpetuation of society, in providing continually and reinforcing its value structure. Therefore it suffers from a lopsided emphasis on economic development — desirable though it is.

What is needed is a comprehensive view of higher education which will take into consideration not only its potential for economic development but also its capacity to sustain and reinforce those perennial values of life which make man a unique creature on earth.

Notwithstanding his narrow premise, Trivedi deserves our thanks for a brilliant and incisive analysis of the overall education scenario in our country and enumeration of constraints for such a state of affairs. Whatever type of transformation of human resources is envisaged, we cannot ignore the analysis.

A L Deshpande
Adarsh Mahavidyalaya
Dhamangaon - 444709
(Maharashtra)

Orientation Courses

I am happy to note that various orientation and regular courses conducted by the Academic Staff Colleges under the aegis of the University Grants Commission for the benefit of the university and college teachers have indeed brought about desirable attitudinal changes in the participants. However, the following observations may be pertinent :

(1) Long-term courses may be arranged in such a way that the academic terms do not get affected by the absence of those teachers who go away to attend these courses. Such courses may be preferably conducted during summer/Diwali/Dashehra/Christmas vacations.

(2) If the teachers are informed in advance about the theme areas of various courses, then only those teachers will attend a particular course who are really interested in the said theme area.

(3) Attending these courses should not be made as a precondition for the promotion of those teachers who already hold a doctoral degree.

(4) Suitable courses may be devised for college principals as well who now number about 7000.

S. Kumar
Principal
Narmada College of Science,
Technology and Commerce
Zadeshwar
Bharuch (Gujarat) 392 011

ANNAMALAI UNIVERSITY
DIRECTORATE OF DISTANCE EDUCATION
ADMISSION NOTIFICATION FOR THE YEAR 1992-93

Telephone : 04144-2610 (Chidambaram)
Telex : 4602 202 DDEC IN
Fax : 04144-2987

The Directorate offers the following Job-Oriented courses of study. Admission is open to persons all over India.

JOB-ORIENTED COURSES

Duration: One Year

1. Diploma in Concrete Technology and Design of Concrete Structure (English Medium)
2. Diploma in Construction Management (English Medium)
   Eligibility (for 1 & 2): Diploma in Civil Engineering/ B.E. Civil Engineering/B.E. Civil and Structural Engineering/A.M.I.E. Civil Engineering.
3. Diploma in Chemical Process, Instrumentation and Control (English Medium)
   Eligibility : B.Sc. with Physics/Chemistry/Mathematics as main and ancillary subjects or Diploma holders in Chemical, Mechanical, Electrical, Paper, Sugar, Food, Petroleum, Polymers or Electronics Engineering.
4. Diploma in Maintenance Management (English Medium)
   Eligibility: i) B.E. (Mechanical/Production/ Electrical/Chemical)
   ii) A.M.I.E. (Mechanical/Electrical/ Chemical)
   iii) Diploma in Engineering (Mechanical/Electrical/Chemical)
5. Postgraduate Diploma in Banking (English Medium)
   Eligibility: Bachelor's degree in Arts, Science, Commerce, Agriculture and Engineering or equivalent qualifications.
6. Post-graduate Diploma in Co-operative Management (English Medium)
   Eligibility: Bachelor's degree in Arts, Science, Commerce, Agriculture and Engineering or equivalent qualifications.
7. Diploma in Sugar Technology (English Medium)
8. Diploma in Fertilizer Technology (English Medium)
   Eligibility (for 7 & 8): B.Sc. graduates with Mathematics, Physics and Chemistry as main and ancillary subjects/B.Sc. (Agri.)/ Diploma holders in Chemical or Mechanical Engineering.
9. Diploma in Safety in Chemical Industries (English Medium)
   Eligibility: Any Graduate in Science/Arts subjects/ B.Pharm. or any Diploma holder/Degree holder in Engineering.
10. Diploma in Industrial Pollution and Control
    Eligibility: i) B.Sc. graduates with Chemistry/ Physics/Botany/Zoology as Main or ancillary subjects or
    ii) Diploma holders in any branch of Engineering and Technology.
11. Certificate Course in Automobile Technology (English & Tamil Medium)
12. Certificate Course in Offset Printing (English & Tamil Medium)
13. Certificate Course in Binding and Finishing (English & Tamil Medium)
14. Certificate Course in Office Management (English & Tamil Medium)
    Eligibility (for 11 to 14): A pass in SSLC (X Standard) or equivalent examination.

The cost of application form and prospectus for each course is Rs.25/- Applications will be sent to all by registered post.

APPLICATION FORM AND PROSPECTUS CAN BE HAD FROM THE DIRECTOR, DIRECTORATE OF DISTANCE EDUCATION, ANNAMALAI UNIVERSITY, ANNAMALAINAGAR-608 002 by sending a requisition along with a crossed Demand Draft for Rs.25/- drawn in favour of the **REGISTRAR, ANNAMALAI UNIVERSITY,** on any bank at **ANNAMALAINAGAR/CHIDAMBARAM,** mentioning clearly the name of the course for which the application form is required and a self-addressed unstamped cover of size 25 cm x 12 cm. Cheques, Postal Orders, Money Orders and Out Station Demand Drafts are **not accepted.** Demand Draft should be purchased on or after **25.05.1992.**

Application for all courses will be issued upto **28-07-1992.**

The last date for receipt of filled-in applications is **31-07- 1992.**

Applications can be had from the following Study Centres also on payment of Rs. 25/- by Demand Draft drawn in favour of the REGISTRAR, ANNAMALAI UNIVERSITY as instructed above.

1. **MADRAS:**	19, Marshals Road, Egmore, Madras - 600 008. (Phone Nos. 861590/861909)
2. **TIRUCHI:**	32-B, 7th Cross, Thillai Nagar, Tiruchi-620 018.
3. **SALEM:**	15, Dr. Subbarayan Street, Salem-636001 (Near Palace Theatre)
4. **NAGERCOIL:**	70, Ammasi Madam Street (Near T.T.C. Bus-stand) Meenakshipuram, Nagercoil-629 001 (Phone No. 3561)
5. **VELLORE:**	4. Thiagarajapuram, Vellore-632 001. (Phone No. 27647)
6. **MADURAI:**	176, North Veli Street, Madurai-625 001.
7. **COIMBATORE:**	72, Sarojini Street, Ram Nagar, Coimbatore-641 009
8. **NEW DELHI:**	46, (SFS) Basant Enclave, New Delhi-110 057 (Phone No. 6875567)
9. **ANNAMALAI NAGAR:**	DDE Building, Annamalai University Annamalainagar- 608 002.

All the study centres except Annamalainagar will remain closed on all Tuesdays, Second Mondays and all other public holidays.

SPOT ADMISSION:

Spot selection for admission to the above courses will be made through all our Study Centres from 01-06-1992 if the applicants submit, along with their applications the necessary original certificates, Demand Draft for prescribed fee and two copies of their stamp size photographs. The spot selection is provisional and subject to confirmation by the Director.

Those who want to get applications by post should apply to the Directorate only and not to the study centres.

Filed in applications should be sent only to the Director, **Directorate of Distance Education, Annamalai University, Annamalainagar, Tamil Nadu, Pin Code 608 002.** IN NO CASE FILLED IN APPLICATIONS SHOULD BE SENT TO THE STUDY CENTRES.

Applications and Prospectus can be had from the Directorate of Distance Education, Annamalai University, Annamalainagar and the Study Centres from 01.06.1992.

REIMBURSEMENT OF NON-REFUNDABLE FEE FOR SC/ST STUDENTS:

As per the G.O. MS. No. 2040 dt. 20.10.1989 of Government of Tamil Nadu, the reimbursement of non-refundable fee for SC/ST students pursuing Correspondence Courses is permissible.

CAUTION

SOME PRIVATE INSTITUTES/INDIVIDUALS POSING AS OUR AGENTS ARE ALLEGEDLY COLLECTING FEES, ISSUING APPLICATION FORMS AND PROMISING ADMISSION TO OUR COURSES. THE DIRECTORATE HAS NO SUCH AGENTS AND TAKES NO RESPONSIBILITY FOR THEIR ACTIONS. CANDIDATES ARE THEREFORE ADVISED TO CORRESPOND DIRECTLY WITH THE DIRECTORATE ONLY.

CANDIDATES ARE WANTED NOT TO BECOME VICTIMS OF CHEATING AND EXPLOITATION BY BOGUS CLAIMANTS IN THIS REGARD.

THE CANDIDATES ARE ADVISED TO APPLY DIRECT TO THE DIRECTORATE INDIVIDUALLY FOR APPLICATION FORM AS WELL AS FOR ADMISSION. APPLICATIONS FOR ADMISSION RECEIVED THROUGH TUTORIALS OR ANY OTHER AGENCY WILL BE SUMMARILY REJECTED.

Admission cannot be claimed as a matter of right and the Directorate reserves to itself the right of admission

No.A1/5/92-93
Place: Annamalainagar
DATE: 18-05-1992

Dr. K. AYYAKKANNU
Director

School of Correspondence Courses
Andhra University : Waltair

NOTIFICATION FOR EXAMINATIONS OF 1992 FOR B.A./B.COM./B.SC.
UNDER COMMON CORE SCHEME

The last date for the receipt of Examination applications together with the prescribed fees for the Examinations of 1992 to be held in July/August, 1992, for the candidates appearing for B.A., B.Com. and B.Sc. Degree Examinations (under Common Core Scheme) through the School of Correspondence Courses is **15th June 1992.** This notification applies to the candidates appearing under Common Core Scheme through the School of Correspondence Courses only.

The dates of Commencement of B.A./B.Com./B.Sc. under Common Core Scheme are as follows :

	Examination		**Date of Commencement of Examination**
I	B.A./B.Com./B.Sc.	..	29-7-1992
II	B.A./B.Com./B.Sc.	..	20-7-1992
III	B.A./B.Com./B.Sc.	..	7-7-1992

Applications received after the prescribed date will not be accepted. Incomplete and defective applications will be summarily rejected.

Examination application form and other particulars relating to the commencement of examinations, mode of payment of examination fee, list of examination centres, amount of examination fee etc., will be sent to all the students of the School of Correspondence Courses who are studying B.A./B.Com./B.Sc. under Common Core Scheme.

Waltair
Dt. 19-5-92

Prof. V. Abraham
Director

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In Service To Pursuit of Research

ANNAMALAI UNIVERSITY

DIRECTORATE OF DISTANCE EDUCATION

ADMISSION NOTIFICATION FOR MANAGEMENT COURSES

1992-93

Telephone : 04144-2610 (Chidambaram)
Telex : 4602 202 DDEC IN
Fax : 04144-2987

Admission is open to persons all over India.

MANAGEMENT COURSES (English Medium)

Duration : One year

1. Diploma in Production Management
   Eligibility : B.E./M.Com./M.B.A./M.A. Economics/M.Sc. Mathematics/ M.Sc. Statistics/B.E. Agriculture Diploma holders in Engineering
2. Post-graduate Diploma in Materials Management
3. Post-graduate Diploma in Business Administration
4. Post-graduate Diploma in Personnel Management
5. Post-graduate Diploma in Marketing Management
6. Post-graduate Diploma in Financial Management
7. Post-graduate Diploma in Tourism Management
8. Post-graduate Diploma in Advertising
9. Post-graduate Diploma in Public Relations
   Eligibility : Any degree

The cost of application form and prospectus for each course is Rs. 25/- Applications will be sent to all by registered post.

APPLICATION FORM AND PROSPECTUS CAN BE HAD FROM THE DIRECTOR, DIRECTORATE OF DISTANCE EDUCATION, ANNAMALAI UNIVERSITY, ANNAMALAINAGAR-608 002 by sending a requisition along with a crossed Demand Draft for Rs. 25/- drawn in favour of the **REGISTRAR, ANNAMALAI UNIVERSITY,** on any bank at **ANNAMALAINAGAR/CHIDAMBARAM,** mentioning clearly the name of the course for which the application form is required and a self-addressed unstamped cover of size 25 cm x 12 cm. Cheques, Postal Orders, Money Orders and Out Station Demand Drafts are **not accepted.** Demand Draft should be purchased on or after **25-05- 1992.**

Application for all courses will be issued upto **28-07-1992.**

The last date for receipt of filled-in applications is **31-07-1992.**

Applications can be had from the following Study Centres also on payment of Rs. 25/- by Demand Draft drawn in favour of the REGISTRAR, ANNAMALAI UNIVERSITY as instructed above.

1. MADRAS : 19, Marshals Road, Egmore,
   Madras - 600 008
   (Phone Nos. 861590/861909)
2. TIRUCHI : 32-B, 7th Cross, Thillai Nagar,
   Tiruchi -620 018.
3. SALEM : 15, Dr. Subbarayan Street, Salem - 636 001
   (Near Palace Theatre)
4. NAGERCOIL : 70, Ammasi Madam Street (Near T.T.C. Bus-stand) Meenakshipuram, Negercoil - 629 001
   (Phone No. 3561)
5. VELLORE : 4, Thiagarajapuram, Vellore - 632 001
   (Phone No. 27647)
6. MADURAI : 176, North Veli Street, Madurai - 625 001.
7. COIMBATORE : 72, Sarojini Street, Ram Nagar,
   Coimbatore -641 009.
8. NEW DELHI : 47, (SFS) Basant Enclave, New Delhi - 110 057
   (Phone No. 6875567)
9. ANNAMALAI NAGAR: DDE Building, Annamalai University,
   Annamalainagar - 608 002.

All the study centres except Annamalainagar will remain closed on all Tuesdays, Second Mondays and all other public holidays.

SPOT ADMISSION

Spot selection for admission to the above courses will be made through all our Study Centres from 01-06-1992 if the applicants submit, along with their applications the necessary original certificates, Demand Draft for prescribed fee and two copies of their stamp size photographs. The spot selection is provisional and subject to confirmation by the Director.

Those who want to get applications by post should apply to the Directorate only and not to the study centres.

Filled-in applications should be sent only to the **Director, Directorate of Distance Education, Annamalai University, Annamalainagar, Tamil Nadu, Pin Code 608 002.** IN NO CASE FILLED-IN APPLICATIONS SHOULD BE SENT TO THE STUDY CENTRES.

Applications and Prospectus can be had from the Directorate of Distance Education, Annamalai University, Annamalainagar and the Study Centres from **01-06-1992.**

REIMBURSEMENT OF NON-REFUNDABLE FEE FOR SC/ST STUDENTS :

As per the G.O. MS. No. 2040 dt. 20.10.1989 of Government of Tamil Nadu, the reimbursement of non-refundable fee for SC/ST students pursuing Correspondence Courses is permissible.

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Admission cannot be claimed as a matter of right and the Directorate reserves to itself the right of admission.

No. A1/4/92-93
Place : Annamalainagar
DATE : 18-05-1992

Dr. K. AYYAKKANNU
Director

MINISTRY OF HUMAN RESOURCE DEVELOPMENT
(Department of Education)
JOHN CRAWFORD SCHOLARSHIP SCHEME – 1993 GOVT. OF AUSTRALIA

Applications are invited on plain paper in the proforma given below from Indian nationals for the award of 9 Scholarships on a merit basis under the above mentioned Scheme for higher studies/research leading to a doctoral degree. These Scholarships are not admissible for Post-doctoral studies.

I.VALUE : Scholarships cover (a) full tuition fees; (b) economy class air fares (both ways) to Australia and back. (c) adequate living allowance to cover housing and food for the duration of the Scholarships (this is also payable during semester and annual breaks.)

II.AGE : Candidates must have attained the age of 25 years by 1-1- 1993 and but not have exceeded 40 years of age by 1-1-1993.

III. MINIMUM QUALIFICATION : (a) one must have completed at least masters degree in one of the subject-fields indicated below with first Division (applicant will be required to write a description (Minimum 500 words of his/her proposal) (b)The Candidates must have completed tertiary Education in English Medium.

IV. SUBJECT-FIELDS : (a) ENGINEERING AND TECHNOLOGY – Aeronauticl Engineering,Biotechnology, Instrument Technology, Communication, Electronic Engineering, Manufacturing Engineering, Mineral Processing, Engineering, Industrial Design, Information Technology; **HUMANITIES & SOCIAL SCIENCES** – International Business, Urban and Regional Planning, History, Economics, Enlish Literature, Environmental studies, Sociology, Education and Pedagogy, Philosophy, Fine Arts, Political Science, Psychology and Mass Communication.

N.B.1. Only Candidates with 60% of marks and above at theabove prescribed qualification are eligible. Where grades are mentioned the Candidates must indicate the conversion formula adopted by the University/Institution and should also indicate equivalent percentage of marks. 2. Equivalent foreign degree will be considered. 3. Each application must be accompanied by attested copies of (a)Certificate of age (b) Marks Sheet of the qualifying Examination (c)All degree/diplomas/Certificates. 4. Candidates who have already been abroad for study /training specialisation either on scholarship or on their own for a period exceeding Six months are eligible to apply only if they have been in India for at least three consecutive years after their return from abroad. 5. Applications in the subject fields other than those specified above will not be considered. 6. Applications of candidates who are abroad will not be considered. 7. Candidates must furnish a clear and precise programme of study/research (minimum 500 words). 8.Those who havealready done Ph.D. in India or abroad,need not apply. 9. Candidates who do not possess the requisite qualifications need not apply. 10. Candidates should have adequate knowledge of Geographical situation, Cultural heritage of India and the Donor country. 11. Documents submitted alongwith the applications will not be returned. Hence candidates are advised to send only the photocopies of the Certificates, etc.,duly attested. 12. Since, these Scholarships are offered by Foreign Governments applications should invariably be submitted in English only. 13. Employed candidates must send their applications through their employers with a 'No Objection Certificate'.They will not be called for interview unless the certificate is forwarded with the application. Application through proper channel should reach this office by the last date fixed for the purpose. 14. Mere fulfilment of requirements as laid down in the advertisement does not qualify candidates for interview. Interview letters in a particular subject are sent only to the best candidates in order of merit after their applications are judged by a duly constituted Selection Committee of Experts. 15. Applications received after the prescribed date and incomplete applications will not be entertained. 16. Canvassing in any form will be a disqualification. 17. The Selection Committee's decision about candidates for interview or selecting a candidate for nomination will be final. NO REPRESENTATIONS IN THIS REGARD WILL BE ENTERTAINED

LAST DATE : The candidates should apply for the above scholarship on plain paper (preferably typewritten) with a recent Passport sized Photograph duly affixed, furnishing the details/particulars in the given format to the Under Secretary, External Scholarship Division(Section E.S.4) Deptt. of Education,A-1/W-3, Curzon Road Barracks, Kasturba Gandhi Marg, New Delhi-110001, by **15th June, 1992. Applications received late will not be entertained.**

PROFORMA FOR APPLICATION

Recent Passport Size Photograph duly signed to be pasted here. Without photograph application will be considered incomplete

1. Name for the Scholarship Scheme:
2. Subject :
3. Name of the Candidate (in block letters) with full mailing address :
4. Date of birth and the State to which the Candidate belongs:
5. Whether Member of SC/ST (A certificate from the competent authority should be attached.)
6. Academic record starting from High School/Higher Secondary (Attested/Photostat copies of certificates to be attached).

Name of the University/ Board/Instt.	Examination(s)	Year of passing	Division/class with position, if any (In case no class is awarded and only grading is done the conversion formula may be mentioned)	Percentage of marks obtained and position, if any	Subjects taken

7. Details of professional practical training and Research experience specifying the period and number of papers published/previous employment with name and date of employment, if any.
8. Nature of the Present employment with name and date of appointment/designation and the name and address of the employer.
9. Have you been abroad? If so give full particulars of the Country visited and the period of stay. Also mention the date, month and year of return to India (Purpose of visit also to be indicated).
10. Proposed Programme of study/research and Training also specify
    i) The Work at Present engaged in :
    ii) Nature and Programme of study research/training desired.
    iii) Future plans /prospect after the proposed studies/research/training and
    iv) How are these related to the advancement of knowledge of Science and Technology in India.

Place:
Date:

SIGNATURE OF CANDIDATE

NOTE : Employed persons must send their applications duly sponsored by the Employers. However advance applications will be considered provisionally pending sponsorship by employers provided attested copies of certificates of age and Qualifications are attached to advance copies of the applications.

davp 92/73

Ministry of Defence

Defence Research and Development Organisation (DRDO)

ADVT. NO. 031/RAC/92

Applications from highly motivated engineering graduates with bright track record & having aptitude for research and development in Radars, EMI/EMC, Microwave, Gas Trubine, Armament, Computers, Signal Processing, MMW systems & devices, Guidance and Control etc. are invited for the following Fellowship Programmes in DRDO :-

1. ELECTRONICS FELLOWSHIP COURSE – 40 (UR-31, SC-6, ST-3)

2. GAS TURBINE TECHNOLOGY/MECHANICAL ENGINEERING FELLOWSHIP COURSE – 30 (UR-23, SC-5, ST-2)

3. SENIOR FELLOWSHIP COURSE IN GUIDED MISSILES TECHNOLOGY LEADING TO M.E./M.TECH DEGREE – 30 (UR-23, SC-4 ST-3)

The fellowships at (1) and (2) are tenable at Institute of Armament Technology, Pune, for 12 months. Fellowships at (3) are available in various Institutes/universities (mentioned in para 3 below). Admission criteria and eligibility conditions for each of these fellowship programmes are given in the succeeding paragraphs.

(1) ELECTRONICS FELLOWSHIP COURSE

(2) GAS TURBINE TECHNOLOGY/MECHANICAL ENGINEERING FELLOWSHIP COURSE

Selected candidates would have to undergo specialised training as Fellows at Institute of Armament Technology, Pune, for a period of 12 months. The fellows will have to pass such tests as are prescribed by the Institute.

Eligibility:

Age : Not exceeding 26 years (relaxable by five years in case of SC/ST candidates and Govt. servants). Age will be reckoned as on 20th June, 1992.

Essential Educational Qualifications : (A) Electronics Fellowship Course- At least second class Master's degree in Physics/Applied Physics with specialisation in Electronics or second class Bachelor's degree in Electronics and/or Communication Engineering from a recognised University or equivalent. **(B) Gas Turbine Technology/Mechanical Engineering Fellowship Course :** At least second class Bachelor's degree in Mechanical or Aeronautical Engineering from a recognised university or equivalent.

[Candidates appearing in qualifying examination may also apply. They must send copies of mark sheets upto their last semester examination along with the application and result of last semester examination should be communicated immediately on its announcement to RAC. The candidature of such candidates can be considered only if they acquire essential qualifications by 31st July 1992]

(3) SENIOR FELLOWSHIP COURSE IN GUIDED MISSILES TECHNOLOGY AREAS LEADING TO M.E./M.TECH DEGREE

The fellowships are tenable for a duration of 18 months during which selected candidates would have to undergo specialised courses leading to post-graduate degree at one of the Institute/Universities in the subject concerned.

Eligibility :

(a) Age: Not exceeding 26 years. (relaxable by five years in case of SC/ST and Government Servants). Age will be reckoned as on 20th June '92. **Candidates who will be admitted by the Universities/Institutes for their M.Tech programmes will alone be considered for the award of these fellowships.** The details of various fellowship available in different Institutions alongwith qualification requirements for each course are given below:-

S.No.	Name of the University/ Institute	Name of the Course	Qualification requirements	No. of Fellowships
I	II	III	IV	V
1.	Indian Institute of Science, Bangalore-560012.	Aeronautics, Fluid Dynamics, Propulsion, Control	Bachelor's degree in Aero/ Mechanical/Electrical/Electronics/Computer Science Engg	7
2.	Indian Institute of Technology, Madras-600 036.	Aeronautics, Propulsion, Hydro Dynamics, CAD/ CAM	Bachelor's degree in Mechanical/Aero/Computer Science Engg	4
3.	Indian Institute of Technology, Kharagpur-712 302	Signal Processing Microwave Engg	Bachelor's degree in Electrical/Electronics/ Communication Engg	4
4.	Jadavapur University, Calcutta-700 032	Control & Guidance Software	Bachelor's degree in Mech/ Electrical/Electronics/Computer Science Engg	2
5.	PSG College of Technology, Coimbatore	CAD/CAM Production Tech	Bachelor's degree in Aero/ Mechanical/Electrical/Engg	4
6.	Indian Institute of Technology, Bombay	Aero Engg, Control Engg	Bachelor's degree in Mechanical/Aero/Electrical Engg	4
7.	Regional Engg College, Warangal (AP)	Instrumentation/Digital Electronics	Bachelor's degree in Electronics/Electrical/ Computer Science Engg.	2
8.	Madras Institute of Technology, Madras-600 044	Aero-dynamics, Production Engg, Instrumentation	Bachelor's degree in Aero/ Mechanical/Electrical/Electronics Engg	3

Admission to the Senior Fellowship to University/Institutes at Sl.No. 1 to 8 : (a) Candidates who fulfill the prescribed qualification requirements should seek seek admission in any one of the Institutions mentioned above for the concerned subject as and when their M.TECH/ME programme are advertised by the respective Institutions.

(b) After admission in the respective Institutions the candidates should apply for award of Senior Fellowship under IGMDP

(4) APPLICATIONS ARE INVITED FOR THE FOLLOWING POSTS FOR DIRECT RECRUITMENT :-

Centre for Air Borne System, Bangalore

SCIENTIST 'E' : (Rs. 4500-5700) – 1 Post.

Item No. 1: 1 Post-ESSENTIAL QUALIFICATION : (i) At least second class Master's degree in Physics from a recognised university or equivalent. (ii) At least ten years experience in maintenance of Electronics/Avionics systems, Flight test evaluation, Air- worthiness clearance. (iii) Operational management and induction planning of military electronic systems. **DESIRABLE QUALIFICATIONS :** (i) Doctorate degree in relevant subject. (ii) R&D experience in avionics system development, integration and air trials.

SCIENTIST 'D' : (Rs. 3700-5000) – 1 Post.

Item No.2 : 1 Post-ESSENTIAL QUALIFICATION : (i) At least second class Bachelor's degree in Electrical Engineering from a recognised university or equivalent. (ii) Atleast eight years experience in maintenance of Electronic/Avionics system, Flight test and evaluation, Airworthiness clearance. (iii) Operational management & induction planning of military electronic systems. DESIRABLE QUALIFICATIONS : (i) Master's degree in Electrical Engineering. (ii) R&D experience in the field of airborne systems development. (iii) Field experience in the operation of military electronic systems.

Snow & Avalanche Establishment, Manali

SCIENTIST 'B' : (Rs. 2200-4000) – 2 Posts.

Item No.3 : 2 Posts-ESSENTIAL QUALIFICATIONS : (i) At least second class Master's degree in Physics from a recognised university or equivalent. DESIRABLE QUALIFICATIONS (i) Ph.D degree in Material Science. (ii) Experience in avalanche forecasting. (iii) Understanding of the snow physics.

SCIENTIST 'B' : (Rs. 2200-4000) – 2 Posts.

Item No.4 : 2 Posts-ESSENTIAL QUALIFICATIONS : (i) At least second class Bachelor's degree in Civil Engineering from a recognised university or equivalent. DESIRABLE QUALIFICATIONS : (i) Master's degree in Structural Engineering with special reference to Theory of Elasticity. (ii) Understanding of mechanics and failure criterion of particulate or grainular materials. (iii) Experience in the design of structures like the super structure of bridges.

[**Concessions admissible to employees of Snow & Avalanche study Establishment while serving in field area near Manali :** (i) Free ration at the scale as admissible to service personnel of equivalent status. (ii) Free furnished single room accommodation as admissible to service personnel of equivalent status. (iii) Winter clothing on loan as per the scale laid down. (iv) Free Medical Treatment. (v) Avalanche pay @ Rs.250/- p.m. for the duration of deployment in avalanche prone area w.e.f. 01st Nov. to 30th April.]

GENERAL CONDITIONS/INSTRUCTIONS

1. Candidates working in Government/Public Sector/Autonomous Organisations should apply through proper channel. They shall not be interviewed if they fail to produce a "NO OBJECTION" Certificate from their employer at the time of interview.

2. Knowledge of German, French, Russian, Japanese or Chinese language is a desirable qualification.

3. The prescribed Essential Qualifications are the barest minimum and the mere possession of the same does not entitle candidates to be called for interview. Where the number of applications received in response to an advertisement is large and it will not be convenient or possible for the Recruitment and Assessment Centre (RAC) to interview all those candidates, the RAC may restrict the number of candidates for interview to a reasonable limit on the basis of qualifications higher than the minimum prescribed in the advertisement.

4. The RAC at their discretion, may hold a written test of candidates applying for Fellowships. No travelling or other allowance will be paid by the RAC for appearing at such written test. Only those qualifying in written test (if held) will be called for interview. TA will be admissible to those who attend the interview.

5. The number of Fellowships mentioned is tentative and may change.

6. Application should be sent on the plain paper in the format given below (to be typed in A-4 size paper 23 cm x 10 cm) accompanied by a crossed non-refundable current Indian Postal Order of the value of Rs.8.00 drawn in favour of Senior Accounts Officer, Recruitment & Assessment Centre, Defence Research and Development Organisation, payable at New Delhi. There is no fee for Scheduled Caste/Scheduled Tribe candidates.

7. Self-attested copies of certificates in support of educational qualifications, experience etc. MUST BE attached with the application. Candidates will have to produce Original Certificates during interview as proof of details furnished by them in the application.

8. The application should be accompanied by two self-addressed unstamped covers of 23 cm x 10 cm size.

9. Only typewritten applications will be accepted. Incomplete applications will be rejected and no correspondence will be entertained in this respect.

10. Only Indian nationals need apply.

11. The applications should be sent to Director, Recruitment and Assessment Centre, Lucknow Road, Timarpur, Delhi-110054 preferably by Registered Post in a cover superscribed "Application for Fellowship Programme" for Fellowships at items (1) & (2) and for "Items at para (4) 1,2,3,4" only alongwith requisite Postal Orders.

12. Candidates for SENIOR Fellowship Scheme at Item (3) should submit their applications alongwith requisite Postal Orders direct to the Registrar/Dy Registrar/Head of the Department of the Institute only after having obtained admission in the M.E/M.Tech. Programme in the respective discipline. Postal Orders however should be in the name of Senior Accounts Officer, RAC, DRDO, New Delhi-110 011.

13. **Last date for receipt of applications is 20th June 92.** Last date for receipt of applications for candidates from Andaman and Nicobar, Lakshadweep Islands and abroad is **04th July 1992.**

14. Canvassing in any form will be a disqualification.

15. **Selection :** Selection will be on the basis of a test/interview.

16. **Stipend & Salary :** During training, the trainees will be paid a consolidated stipend of Rs. 2000/- for fellowships at 1 & 2. The fellowship amount for IGMDP Fellowship at S.No. 3 is Rs. 2300/- per month presently but may be revised. In addition book allowance would be admissible. They may be given suitable hostel accommodation during the period of Fellowship on payment of rent as per rules. On successful completion of the training, candidates would be placed in one of the Laboratories/Establishment as Scientists 'B' in the scale of Rs. 2200-75-2800-EB-100-4000 plus usual allowances depending upon the place of posting. In addition, advance increments may be given in deserving cases depending on the performance during the training.

17. For instructional tours and summer training in the DRDO establishments, the Fellows will be entitled to TA/DA as admissible to Central Government Group 'A' Officers drawing a basic pay of Rs.2200/- in the scale of Rs.2200-75-2800-EB-100- 4000.

18. During the operation of the Fellowship Scheme, the Fellows will be required to pass all tests/examinations which are prescribed by the Institutes. Those who are not able to pass such tests/examinations and do not successfully complete the training shall not be considered for appointment to the grade of Scientist 'B'.

19. **Bond :** Candidates will be under contractual obligation to serve the Defence Research & Development Organisation for a period of three (3) years after completion of training. During training the candidates will not be permitted to apply/appear for any interview/selection/examination.

20. **Promotion Prospects:** DRDO offers excellent opportunities for career advancement as Scientists. Result oriented and highly motivated scientists can look forward to promotion to the following grades:-

(i) Scientist 'C' : Rs. 3000-4500, (ii) Scientist 'D' : Rs. 3700- 5000, (iii) Scientist 'E' : Rs. 4500-5700, (iv) Scientist 'F' : Rs. 5100-6300, (i) Scientist 'G' : Rs. 5900-7300. Promotion in DRDO depends upon merit and performance and is not linked to availability of vacancies.

21. Candidates have the liability to serve anywhere in India.

NOTE: General Conditions/Instructions at Serial 1,2, 3,6,7,8,9. 10,11,13,14,15,20 and 21 above are applicable and at Serial 4,5,12,16, 17,18,19 above are not applicable for Direct Recruitment posts at Para 4 above.

Following additional General Conditions/Instructions are also applicable for Direct Recruitment posts mentioned at Para 4 above.

1. Higher staring salary may be granted to the candidates whose performance is exceptionally brilliant in the interview.

2. **Age Limit :** (i) For Scientist 'B' : Not exceeding 28 years'. (ii) For Scientist 'D' and Scientist 'E' : Not exceedings 45 years'. Age is relaxable by 5 years in case of Govt. servants and those belonging to Scheduled Caste and Scheduled Tribe communities. Crucial date of determining age is 20th June 1992.

3. Persons called for interview would be reimbursed actual train/bus fare by shortest route limited to second class rail fare from the normal place of residence to the place of interview.

4. Candidates desirous of applying for more than one post may apply separately for posts indicating Item No. of the posts.

5. Candidates on appointment will have the opportunity to carry out Ph.D. with external registration and may be sponsored for doing M.Tech.

6. Opportunities are also available for study leave for carrying out higher studies abroad.

7. Though initial place of posting is indicated against some of the posts, yet candidates have the liability to serve anywhere in India.

PROFORMA APPLICATION

Application for Fellowship Course in ...... /Scientist " ......" Item No.....

*(To be indicated as applicable)

Affix Passport
size
latest Photograph

1 Advertisement No.
2. Name in full (Shri/Smt/Km)
(in BLOCK LETTERS)
3. Details of Postal Order (No., Date & Amount)
4. (a) Date of Birth :
(in Christian era in figures)
(b) Age as on 20th June 1992:
5. Nationality :
6. Marital Status:
7. Father's/Husband's name :
8. Address for correspondence :
(in block letters with PINCODE)
9. Permanent address
(in block letters with PINCODE)
10. Nearest Railway Station :
11. Whether belong to SC/ST :
(If yes, attach certificate)
12. Educational Qualifications :
In chronological order from X Standard
(SSLC/HS/HSC) onwards

Sr. No.	Examination Passed	University/Institution/ Board	Year of Passing	Subject taken	Percentage of Marks

13. (a) Are you a Govt. servent : Yes/No
(b) If yes, whether in Central/State Govt/Union Territory Govt. (write clearly)
14. Professional Training :

Organisation	Period		Details of Training
	From	To	

15. (a) Are you qualified at GATE 91 :
(b) If qualified, please give the percentile score :
16. Employment Record :

Name & address of employer	Period of service		Designation of the post held/Name of Estt.	Scale of pay of each post & present basic pay	Detailed description of work*	Reason for leaving
	From	To				

*Separate sheet may be attached if necessary.

17. Minimum joining time required:
18. Field of Special Interest :
19. (a) Resume of research work/experience, if any:
(Attach separate signed sheet(s), if necessary)
20. Are you under any contractual obligation to serve Central/State Govt/PSU/Autonomous Body? If so, give details :
21. Details of relatives already employed in DRDO :

Name of Relatives	Relationship	Lab/Estt. in which employed	Post Held

22. Have you applied for any post in DRDO during the past two years? If yes, give particulars:

Sr. No.	No and Date of Advt	Name of Post Discipline	Date of Interview	Remarks

23. Any other information you may wish to add (Use separate sheet if necessary).
24. Declaration :

I declare that the foregoing information is correct and complete to the best of my knowledge and belief and nothing has been concealed/distorted. If at any time, I am found to have concealed/distorted any material information, my appointment shall be liable to summarily termination without notice/compensation. I will, if and when required, take up duty in the discharge of government assignments anywhere in India.

Place :
Date :

Signature of Candidate

davp 92/90

CLASSIFIED ADVERTISEMENTS

GURU NANAK DEV UNIVERSITY

AMRITSAR

Advertisement No.6/92

Applications are invited for the following posts on prescribed form obtainable at a price of Rs.2/- from the office of the Registrar by making a written request accompanied by self-addressed and stamped (Rs.2.50) envelope of 23x10cms. so as to reach this office by **19.6.1991** alongwith crossed Indian Postal Order of Rs.10/- for post/s at Sr.No.1 to 2 and Rs.5/- for others (non-refundable) drawn in favour of the Registrar, Guru Nanak Dev University, Amritsar.

Persons already in employment must send the application through the employer. Candidates from within India may not be considered in absentia. Higher start in the grade may be given depending upon qualifications and experience.

The Vice-Chancellor may place before the Selection Committee the name of a suitable person for any post for consideration alongwith the applications received through advertisement.

The qualification for the post of Reader will be those as prescribed by the University Grants Commission and approved by the State Govt. from time to time.

Generally, the minimum qualifications for appointment to the post of Lecturer shall be Master's degree in the relevant subject with not less than 55% marks or its equivalent grade and good academic record. The candidates must have qualified NET or JRF Test conducted by the UGC/CSIR or JPT or equivalent examination; but the candidates who are Ph.D. and those who have completed M.Phil. degree by 31.3.1991 are exempted from this test.

MUSIC DEPARTMENT

1. READER – 1 (Grade Rs.3700-5700)
   Specializations : Instrumental Music/ Vocal Music
   Essential: 1. Performing Artist of eminence.
   2. A sound knowledge of Musical theory and ability to guide research of M.Phil/Ph.D. level,
   Desirable : Research Publications.
2. LECTURER – 1 (Grade Rs.2200-4000)
   Specializations : Instrumental Music/ Vocal Music
   Essential : 1. Performing Artist of repute
   2. Sound knowledge of musical theory
   Desirable: 1. Ability to teach and guide research of M.Phil. level
   2. Research publications.
3. **ACCOMPANIST (TABLA) – 1**
   (Grade Rs.1350-2400)
   Essential : Ability to provide efficient accompaniment to vocal as well as instrumental music.
   Desirable: 1. Matriculate
   2. A good soloist
4. **ACCOMPANIST (HARMONIUM) – 1**
   (Grade Rs.1350-2400)
   Essential : Ability to provide good accompaniment to vocal music as well as instrumental music.
   Desirable : A sound knowledge of Ragas.
5. **ACCOMPANIST(SITAR) – 1**
   (Grade Rs.1350-2400)
   Essential : Ability to provide good accompaniment to vocal music as well as instrumental music.
   Desirable : A sound knowledge of Ragas.

NOTE

1. Candidates belonging to Scheduled Castes/Backward Classes of Punjab State when called for interview will be paid travelling allowance according to University rules.
2. Incomplete applications in any respect or without prescribed fee or received after the due date may not be entertained.
3. It is not obligatory to call every candidate for interview who fulfils the prescribed qualifications.

REGISTRAR

ROHILKHAND UNIVERSITY

BAREILLY

Advt. No. 9/92

Rohilkhand University, Bareilly has openings for faculty positions at various levels i.e. Professors, Readers and Lecturers as indicated below:

1. Faculty of Arts
   (a) **Applied and Regional Economics Department**
   Lecturer – One (Temporary)
   (b) **Ancient History & Culture Department**
   Reader – One (Leave Vacancy)
   Lecturer – One (Temporary)
2. Faculty of Life Sciences
   (a) **Plant Science Department**
   Reader – One (Permanent)
   Lecturer – One (Temporary)
   (b) **Animal Science Department**
   Professor – One (Permanent)
   Lecturer – One (Temporary)
3. Faculty of Education
   Department of Education(M.Ed)
   Reader – One (Temporary)
   Lecturer – Three (Temporary)
4. Faculty of Law
   Department of Law (LL.M.)
   Professor – One (Temporary)
   Lecturer – Two (Temporary)
5. Faculty of Commerce:
   Department of Business Administration (M.B.A.)
   Professor-one (Temporary)
   Lecturer -Two (Temporary)

Scale of Pay

Professor	Rs. 4500-7300
Reader	Rs. 3700-5700
Lecturer	Rs. 2200-4000

ESSENTIAL QUALIFICATIONS

For Professor

Eminent Scholarship with published work of high quality and active engagement in Research and ten years experience of teaching or research and experience of guiding research at doctorate level.

OR

Outstanding scholarship with established reputation for significant contribution of knowledge.

For Reader

1. Good academic record with a doctorate degree or equivalent published work and active engagement in research or innovation in teaching methods or production of teaching materials; and
2. Five years experience of teaching or research including at least three years as lecturer or in an equivalent position; provided that the requirement contained in sub clause (ii) may be relaxed in the case of a candidate who, in the opinion of the selection committee, has outstanding research work to his credit.

For Lecturer

1. In the case of faculty of arts (except the departments of Drawing and Painting and Music) and faculties of Commerce, Science and Life Sciences, the minimum qualifications for the post of a Lecturer in the University shall be Master's degree or an equivalent degree of a foreign University in the relevant subject with at least 55% marks or its equivalent grade and consistently good academic record.
2. In the case of Faculty of Education, the minimum qualifications for the post of a Lecturer in the University shall be

Master's degree or an equivalent degree of a foreign University in Education (that is an M.Ed. degree) with at least 55% marks or its equivalent grade and consistently good academic record.

3. In the case of Faculty of Law the minimum qualifications for the post of a Lecturer in the University shall be degree of Master of Laws or an equivalent degree of a foreign University with atleast 55% Marks or its equivalent grade and consistently good academic record.
4. For appointment to the post of Lecturer only those candidates shall be eligible who, besides fulfilling the minimum academic qualifications prescribed for the post of Lecturer, have qualified in a, comprehensive test, if any, to be conducted as per scheme of University Grants Commission.
5. In the department of Business-Administration Post Graduate Degree required is M.B.A.

Note

1. Temporary posts are likely to be made permanent
2. Candidates who have already applied in response to our earlier advertisement No. 7/89/1257-1412 dated 10.11.1989 need not apply again, however, they may inform details of their extra achievements gained during this period, if any.

How to apply

Prescribed application forms can be obtained from the Registrar, Rohilkhand University, Bareilly on payment of Rs.25.00 through Bank Draft or crossed Indian Postal Order in favour of the Finance Officer, Rohilkhand University, Bareilly alongwith a self addressed stamped envrlope of 9"x6" size. Six copies of applications are to be submitted. Applications on plain paper and received after due date will not be accepted. Application forms will not be sent by post after 15th June, 1992

Last date for receipt of application form is **21st of June, 1992.**

R.C. PANT
REGISTRAR

NATIONAL MUSEUM INSTITUTE OF HISTORY OF ART, CONSERVATION AND MUSEOLOGY (NMIHACM)
C/o National Museum, Janpath, New Delhi-110011
(A DEEMED UNIVERSITY)

ADMISSION NOTICE 1992-93

NMIHACM is a unique "Museum University" established by the Department of Culture, Ministry of Human Resource Development, Govt. of India and is an integral part of the National Museum, New Delhi. It imparts courses to the M.A. & Ph.D. students in three disciplines, i.e., History of Art, Conservation & Restoration of Works of Art and Museology.

Appllications are invited for admission to Ph.D/Masters' Programmes in the following subjects commencing July 1992.

1. PH.D (HISTORY OF ART): ***Essential Qualifications:*** Masters' Degree in History of Art, Fine Arts, Ancient History & Culture, Archaeology, Comparative literature/Aesthetics or M. Phil.

2. PH.D (CONSERVATION & RESTORATION OF WORKS OF ART): ***Essential Qualifications:*** Masters' Degree in Conservation of Works of Art or M.Sc. with Chemistry, Physics etc. with sufficient experience in relevant field or M. Phil

3. PH.D (MUSEOLOGY): ***Essential Qualifications:*** M.A. in any branch of Humanities or in any academic subject related to Museum Collections. ***Desirable:*** (all Ph.Ds): Knowledge of any classical or foreign language such as Sanskrit, Persian, Arabic, Greek, Latin, French, German, Italian, etc. Candidates having qualified JRF test conducted by CSIR/UGC shall be preferred.

4. M.A. (HISTORY OF ART): ***Eligibility:*** B.A. with History of Art or Fine Arts as a subject or B.F.A. or equivalent. Candidates having M.A. in Ancient History & Culture, Archaeology, Comparative Aesthetics and Literature, Fine Arts and equivalent may also apply.

5. M.A. (CONSERVATION & RESTORATION OF WORKS OF ART): ***Eligibility:*** B.Sc. with Chemistry or Physics as one of the main subjects or B.F.A. with M.Sc. in Chemistry, Physics, Botany, Zoology, etc.,

6. M.A. (MUSEOLOGY): ***Eligibility:*** B.A. in any branch of Humanities, e.g. History of Art, Archaeology, Fine Arts, Anthropology or in any academic subject related to Museum Collections or Diploma in Museology. ***Desirable:*** (all M.A.s): Knowledge of one classical or foreign language such as Sanskrit, Persian, Arabic, Greek, Latin, French, German, Italian.

GENERAL: (1) Good academic records with 55% and above marks at Graduate or Post-graduate levels are essential for all M.A. and Ph.D. courses **(2)** Candidates seeking admission to Masters Programme shall be expected to sit for written exam. followed by an interview **(3)** Revervation of seats for SC/ST shall be as per Government rules.

Prospectus and Application Forms: The application forms and prospectus are available on request accompanied by Demand Draft for Rs. 25/- in favour of Registrar, NMIHACM, New Delhi and payable at any Nationalised Bank at New Delhi alongwith a stamped (Rs. 7/-) self-addressed envelope (30 cms x 25 cms). ***Receipt of Applications & Commencement of Programme:*** The last date for receipt of application is **20TH JUNE, 1992 (29TH JUNE, 1992** if sent by post) and classes will commence on or about 27th July, 1992

S.R.K. Gupta
Registrar

davp 1151(1)92

ANNAMALAI UNIVERSITY
DIRECTORATE OF DISTANCE EDUCATION

ADMISSION NOTIFICATION FOR P.G. DIPLOMA IN PRE-PRIMARY EDUCATION
AND
M.Ed. COURSES
1992-93

Telephone : 04144-2610 (Chidambaram)
Telex : 4602 202 DDEC IN
Fax : 04144-2987

Admission is open to persons all over India.

PROFESSIONAL COURSES :

1. **Post Graduate Diploma in Pre-Premary Education (English Medium)**
   Duration : **One year.**
   Eligibility : Any graduate.
2. **M.Ed. (English and Tamil Medium)**
   Duration: **One Year**
   Eligibility: B.Ed./M.H.Ed. or an equivalent degree.

The cost of application form and prospectus for each course is Rs.25/- Applications will be sent to all by registered post.

APPLICATION FORM AND PROSPECTUS CAN BE HAD FROM THE DIRECTOR, DIRECTORATE OF DISTANCE EDUCATION, ANNAMALAI UNIVERSITY, ANNAMALAINAGAR-608 002 by sending a requistion along with a crossed Demand Draft for Rs. 25/- drawn in favour of the **REGISTRAR, ANNAMALAI UNIVERSITY,** on any bank at **ANNAMALAINAGAR/CHIDAMBARAM,** mentioning clearly the name of the course for which the application form is required and a self-addressed unstamped cover of size 25 cm x12 cm. Cheques, Postal Orders, Money Orders and Out Station Demand Drafts are **not accepted.** Demand Draft should be purchased on or after **25-05-1992.**

Application for all courses will be issued upto **28-07-1992.**

The last date for receipt of filled-in applications is **31-07-1992.**

Applications can be had from the following Study Centres also on payment of Rs. 25/- by Demand Draft drawn in favour of the REGISTRAR, ANNAMALAI UNIVERSITY as instructed above.

1. **MADRAS:** 19, Marshals Road, Egmore, Madras - 600 008
(Phone Nos. 861590/861909)

2. **TIRUCHI:** 32-B, 7th Cross, Thillai Nagar, Tiruchi-620 018.

3. **SALEM :** 15, Dr. Subbarayan Street, Salem - 636 001
(Near Palace Theatre)

4. **NAGERCOIL:** 70, Ammasi Madam Street (Near T.T.C. Bus-stand) Meenakshipuram, Nagercoil-629001
(Phone No. 3561)

5. **VELLORE:** 4, Thiagarajapuram, Vellore-632 001
(Phone No. 27647)

6. **MADURAI:** 176, North Veli Street, Madurai - 625 001.

7. **COIMBATORE:** 72, Sarojini Street, Ram Nagar,
Coimbatore - 641 009.

8. **NEW DELHI:** 47, (SFS) Basant Envlave, New Delhi - 110 057
(Phone No. 6875567)

9. **ANNAMALAI NAGAR:** DDE Building, Annamalai University,
Annamalainagar - 608 002.

All the study centres except Annamalainagar will remain closed on all Tuesdays, Second Mondays and all other public holidays.

SPOT ADMISSION:

Spot selection for admission to the above courses will be made through all our Study Centres from 01-06-1992 if the applicants submit along with their applications the necessary original certificates, Demand Draft for prescribed fee and two copies of their stamp size photographs. The spot selection is provisional and subject to confirmation by the Director.

Those who want to get applications by post should apply to the Directorate only and not to the study centres.

Filled-in applications should be sent only to the **Director, Directorate of Distance Education, Annamalai University, Annamalainagar, Tamil Nadu, Pin Code 608 002.** IN NO CASE FILLED-IN APPLICATIONS SHOULD BE SENT TO THE STUDY CENTRES.

Applications and Prospectus can be had from he Directorate of Distance Education, Annamalai University, Annamalainagar and the Study Centres from 01-06-1992.

REIMBURSEMENT OF NON-REFUNDABLE FEE FOR SC/ST STUDENTS:

As per the G.O. MS. No. 2040 dt. 20.10.1989 of Government of Tamil Nadu, the reimbursement of non-refundable fee for SC/ST students pursuing Correspondence Courses is permissible.

CAUTION

SOME PRIVATE INSTITUTES/INDIVIDUALS POSING AS OUR AGENTS ARE ALLEGEDLY COLLECTING FEES, ISSUING APPLICATION FORMS AND PROMISING ADMISSION TO OUR COURSES. THE DIRECTORATE HAS NO SUCH AGENTS AND TAKES NO RESPONSIBILITY FOR THEIR ACTIONS. CANDIDATES ARE THEREFORE ADVISED TO CORRESPOND DIRECTLY WITH THE **DIRECTORATE ONLY.**

CANDIDATES ARE WARNED NOT TO BECOME VICTIMS OF CHEATING AND EXPLOITATION BY BOGUS CLAIMANTS IN THIS REGARD.

THE CANDIDATES ARE ADVISED TO APPLY DIRECT TO THE DIRECTORATE INDIVIDUALLY FOR APPLICATION FORM AS WELL AS FOR ADMISSION. APPLICATIONS FOR ADMISSION RECEIVED THROUGH TUTORIALS OR ANY OTHER AGENCY WILL BE SUMMARILY REJECTED

Admission cannot be claimed as a matter of right and the Directorate reserves to itself the right of admission.

No.A1/1/92-93
Place: Annamalainagar
DATE: 18.05-1992

Dr. K.AYYAKKANNU
Director

UNIVERSITY NEWS, MONDAY, JUNE 1, 1992 Regd. No. R.N. 7180/63 Postal Regd. No. DL–11106/92

ANNAMALAI UNIVERSITY

DIRECTORATE OF DISTANCE EDUCATION

ADMISSION NOTIFICATION FOR MASTER OF LAW AND OTHER LAW COURSES

1992-93

Telephone : 04144-2610 (Chidambaram)
Telex : 4602 202 DDEC IN
Fax : 04144-2987

Admission is open to persons all over India.

LAW COURSES

a) POSTGRADUATE COURSE
1. MASTER OF LAW (English Medium)
   - i) **Branch I** : Contracts Including Mercantile Law
   - ii) **Branch II** : Labour and Industrial Relations and Administrative Law

   Duration: **Three years**
   Eligibility: B.L. or an equivalent degree.

b) UNDERGRADUATE COURSES
1. B.A.L. (Bachelor of Academic Laws) (English Medium)
   Duration : **Three years**
   Eligibility: Any Degree
2. B.G.L. (English Medium)
   Duration: **Two years**
   Eligibility: Any degree

c) DIPLOMAS: (ENGLISH MEDIUM)
1. Diploma in Company Law with Banking Law and Practice
2. Diploma in Labour Laws with Administrative Law
3. Diploma in Law of Taxation
4. Diploma in Management Laws
5. Diploma in Criminology and Administration of Criminal Justice
6. Diploma in Insurance Laws

Duration: **One Year**
Eligibility: Any degree

The cost of application form and prospectus for each course is Rs.25/- Applications will be sent to all by registered post.

APPLICATION FORM AND PROSPECTUS CAN BE HAD FROM THE DIRECTOR, DIRECTORATE OF DISTANCE EDUCATION, ANNAMALAI UNIVERSITY, ANNAMALAINAGAR-608 002 by sending a requisition along with a crossed Demand Draft for Rs. 25/- drawn in favour of the **REGISTRAR, ANNAMALAI UNIVERSITY**, on any bank at **ANNAMALAINAGAR/CHIDAMBARAM**, mentioning clearly the name of the course for which the application form is required and a self-addressed unstamped cover of size 25 cm x 12 cm. Cheques, Postal Order, Money Orders and Out Station Demand Drafts are **not accepted**. Demand Draft should be purchased on or after **25-05- 1992**

Application for all courses will be issued upto **28-07-1992**

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5. **VELLORE :** 4,. Thiagarajapuram, Vellore - 632 001 (Phone No. 27647)
6. **MADURAI:** 176, North Veli Street, Madurai - 625 001.
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9. **ANNAMALAI NAGAR:** DDE Building, Annamalai University, Annamalainagar - 608 002.

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Admission cannot be claimed as a matter of right and the Directorate reserves to itself the right of admission.

No. A/1/3/92-93
Place: Annamalainagar
DATE: 18-05-1992

Dr.K. AYYAKKANNU
Director

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From R to L : Dr. P. Rama Rao, Secretary, Department of Science and Technology, Govt. of India, who delivered the convocation address at the Sri Venkateswara University, Prof. P. Jayarama Reddy, Vice-Chancellor, Shri Krishan Kant, Governor of Andhra Pradesh & Chancellor and Shri K. Jayadeva Reddy, Registrar of the University.

माखनलाल चतुर्वेदी
राष्ट्रीय पत्रकारिता विश्वविद्यालय
भोपाल

माखनलाल चतुर्वेदी राष्ट्रीय पत्रकारिता विश्वविद्यालय की स्थापना मध्यप्रदेश शासन द्वारा एक अधिनियम के तहत् की गई है। इस स्वायत्तशासी विश्वविद्यालय को पत्रकारिता और जनसंचार के शिक्षण, प्रशिक्षण, शोध और प्रकाशन के राष्ट्रीय केन्द्र के रूप में विकसित किया जा रहा है। पत्रकारिता और जनसंचार के प्रतिष्ठित विशेषज्ञ इस विश्वविद्यालय से जुड़े हुए हैं तथा इसके विकास में सक्रिय भागीदारी निभा रहे हैं।

विश्वविद्यालय निम्नलिखित पदों के लिये निर्धारित योग्यता वाले उम्मीदवारों से आवेदन पत्र आमंत्रित करता है–

जनसंचार संकाय : 1. *सरकारी एवं सार्वजनिक क्षेत्रों में जनसम्पर्क पाठ्यक्रम*
2. *ग्रामीण और आदिवासी संचार पाठ्यक्रम*
3. *सूंचना विज्ञान पाठ्यक्रम*

(1) *रीडर : एक पद (सामान्य)*

अनिवार्य योग्यता – 1. संचार (Communications) में कम से कम द्वितीय श्रेणी से स्नातकोत्तर उपाधि
2. पत्रकारिता एवं जनसंचार की कक्षाओं को पढ़ाने का कम से कम तीन वर्ष का अनुभव और/अथवा ग्रमीण या आदिवासी क्षेत्र में स्वयंसेवी संस्था में कम से कम तीन वर्ष का कार्य अनुभव।

वांछनीय– समाज विज्ञान/सामाजिक कार्य/ग्रमीण विकास/मानव विज्ञान/मनोविज्ञान मे स्नातकोत्तर उपाधि डाक्टरेट अथवा एक्शन रिसर्च का अनुभव।

आयु सीमा– अधिकतम 45 वर्ष

(2) *व्याख्याता : – एक पद (सामान्य)*

अनिवार्य योग्यता– 1. संचार (Communications) में कम से कम द्वितीय श्रेणी मे स्नातकोत्तर उपाधि।

वांछनीय– 1. समाज विज्ञान/सामाजिक कार्य/ग्रमीण विकास/मानव विज्ञान/मनोविज्ञान में स्नातकोत्तर उपाधि।
2. अध्यापन का अनुभव।
3. शोध/सामाजिक कार्य का अनुभव।

आयु सीमा– 22 वर्ष से 35 वर्ष।

पत्रकारिता संकाय 1. *पत्रकारिता पाठ्यक्रम*
2. *समाचार पत्र प्रबन्धन पाठ्यक्रम*

(3) व्याख्याता : – *एक पद (सामान्य)*

अनिवार्य योग्यता– 1. समाज विज्ञान या वाणिज्य में कम से कम द्वितीय श्रेणी में स्नातकोत्तर उपाधि।
2. व्यवसाय प्रबन्धन या चार्टर्ड एकाउन्टेंसी में स्नातक स्तरीय उपाधि।
3. अंग्रेजी का भी अच्छा ज्ञान।

वांछनीय– 1. किसी बड़े या मध्यम श्रेणी के समाचार पत्र संगठन में प्रबन्धकीय पद पर समुचित कार्य का अनुभव।
2. शिक्षण का अनुभव।
3. कानून का ज्ञान ।

आयु सीमा– 22 से 40 वर्ष (नियमित नियुक्ति के लिए)
60 वर्ष (संविदा नियुक्ति के लिए)

(4) *व्याख्याता : – एक पद (सामान्य)*

अनिवार्य योग्यता– 1 वाणिज्य में कम से कम द्वितीय श्रेणी में स्नातक स्तरीय उपाधि।
2 संचार अथवा पत्रकारिता में स्नातकोत्तर उपाधि।

आयु सीमा– 22 से 35 वर्ष।

(5) *व्याख्याता : – एक पद (सामान्य)*

अनिवार्य योग्यता– 1. पत्रकारिता अथवा संचार में कम से कम द्वितीय श्रेणी में स्नातकोत्तर उपाधि।

वांछनीय– 1. किसी बड़े या मध्यम श्रेणी के समाचार-पत्र में कम से कम एक वर्ष का अनुभव।
2. अध्यापन/शोध का अनुभव।

आयु सीमा– 23 से 35 वर्ष।

सामान्य अनुदेश : –

- उपरोक्त सभी पदों के लिए वेतन के अतिरिक्त गृह किराया भत्ता एवं मध्य प्रदेश सरकार द्वारा समय–समय पर स्वीकृत महंगाई भत्ता देय होगा।

पद.	वेतन	वर्तमान दर पर वेतनमान के न्यूनतम पर कुल परिलब्धियाँ
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- समस्त पदों के लिए उपाधि विधि द्वारा स्थापित किसी विश्वविद्यालय की होनी चाहिए। अनुभव भी किसी विश्वविद्यालय अथवा प्रतिष्ठित शिक्षा संस्था का ही स्वीकार्य होगा।
- आवेदन सम्पूर्ण जानकारी जैसे आयु, शैक्षणिक योग्यता और अनुभव के प्रमाणपत्रों की प्रतिलिपियों के साथ दिनांक 20 जून 1992 तक पंजीकृत डाक से कार्यपालन निदेशक, माखनलाल चतुर्वेदी राष्ट्रीय पत्रकारिता विश्वविद्यालय, ई- 8, अरेरा कालोनी, पो०बा० नं० आर० एस० एन० /60, भोपाल - 462016 को भेजे जाएं।
- सभी पदों के लिए आवेदन शुल्क 50 रुपये बैंक ड्राफ्ट द्वारा जो कि "माखनलाल चतुर्वेदी राष्ट्रीय पत्रकारिता विश्वविद्यालय" के नाम भोपाल में देय हो, संलग्न करना अनिवार्य है।,
- एक से अधिक पदों के लिए आवेदन किया जा सकता है, परन्तु उसके लिए अलग आवेदन तथा आवेदन शुल्क देना अनिवार्य है।
- विश्वविद्यालय मे शिक्षण का माध्यम हिन्दी है, अतः अध्यापन हिन्दी में करना होगा।
- अपने विषय की डिप्लोमा, स्नातक, स्नातकोत्तर कक्षाओं मे अध्यापन, आंतरिक मूल्यांकन, व्यावहारिक प्रशिक्षण एवं परीक्षाओं के आयोजन के अतिरिक्त विश्वविद्यालय द्वारा चलाए जा रहे प्रशिक्षण कार्यक्रम, कार्यशालाओं, परिसंवाद एवं शोध के आयोजन का दायित्व संभालना होगा।
- अपने विषय से सम्बन्धित प्रकाशनों का दायित्व संभालना होगा।
- असाधारण योग्यता वाले उम्मीदवारों के लिए अनुभव में शिथिलता और उच्च वेतन की सुविधा दी जा सकती है।
- सेवारत उम्मीदवारो का चयन होने की दशा में अपने नियोजक से प्रमाणित प्रमाण पत्र प्रस्तुत करना होगा।
- केन्द्र अथवा राज्य सरकार में सेवारत उम्मीदवार त्यागपत्र देकर ही विश्वविद्यालय में सेवा आरम्भ कर सकते हैं।
- ये सभी पद अस्थाई हैं परन्तु बाद में स्थाई किए जा सकते हैं।
- चयन की प्रक्रिया में विश्वविद्यालय का निर्णय अंतिम होगा।

कार्यपालन निदेशक

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Editor :
SUTINDER SINGH

ENTATION UNIT
22 JUN 92
C.F.T.R.I., MYSORE

WHY READ?

Biplab K.Mazumdar*

At the end of a lecture on adult education in Calcutta, a young man got up and asked the lecturer a different question. He was well-dressed, polite and serious, and spoke excellent English. His life, he explained, had been a busy one, and he had never had any time to acquire any literary culture. People told him that literary culture was important, so he was endevouring to fill in the gap. He had been reading a number of good books, conscientiously. He was not particularly enjoying reading them, nor did he quite see what he was getting out of reading them. They took up a lot of his time and attention, did not seem to teach him anything obviously useful. He intended to plod along; but what he wanted to know was what,once he had in his patient, laborious fashion acquired culture, would culture do for him? Why was it worth the trouble which, obviously, a number of people were willing to takeover it? The young man, in an unusually frank and honest way, asked a question which is centrally important one, and which it is very difficult to answer. He could have been told, of course, in a superior way that he was taking up a utilitarian attitude to culture; that it is something to be pursued for its own sake, not for what can be got out of it. But he would still have been able to ask what its own sake, its characteristic and intrinsic desirability, is.

What are some of the answers? One common contemporary answer is that the greater works at least of imaginative literature give us an insight – it is often a moral insight – into our own feelings and the feelings of others, they enable us to see significant recurrent patterns in experience, which we would not otherwise see. This point was made, on this occasion, to the questioner, and his answer was that a shorter and more straight forward road to that goal seemed to be the study of philosophy. Another answer is that we do not fully live in our age unless, in some degree at least, we possess the higher culture of that age. An honest answer and not necessarily a contemptous one is that the reader who finds he has no response at all to the language of feeling in words ought to test his responses in some other field; he should listen to music perhaps, or look at paintings, or go for country walks, and see if landscape excites him. And there are immoral answers. Today culture is being marketed as a prestige product – much as certain brands of cigarette are specifically to express marginal differentiation. It would be possible to turn cardinal Newman's famous argument against utilitarianism in education, and for a liberal education, rather sinisterly upside down. A liberal education is the education of a gentleman and therefore, if you acquire some of the outward marks of a liberal education, you may more easily pass for a gentleman; and that pays.

It does not seem clear, at least, that where, thirty or forty years ago, the typical questioner on adult education was preoccupied with a rather altruistic and noble notion of improving himself, this young man was more preoccupied with the notion of getting on. Our society which, at some levels, is much more socialistic than it was thirty or forty years ago is at other levels much more competitive; which we may explain the point about the marketing of culture as a prestige product. As early as 1939, T.S.Eliot, in

(Contd. on page 10)

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*Lecturer, Calcutta University, Calcutta.

Can Satellite Talk Back Facility Overcome the Limitations of Distance Education ?

Manisha Pande*

Distance Education has paved the way for providing education to the masses, who for some reasons are not able to pursue formal education or participate in class-room intractive learning. This system of education does not stress on the physical presence of students. Moreover, it attempts to provide all materials and facilities laden in the conventional system of education. Mass Media plays an important communication role in distance teaching, of which one of the powerful channel is 'Television'. The limitations inherent in the system, as observed, are that of lack of immediate interaction and delayed feedback. Since the advent of Distance Education this lacunae in 'Distant Teaching-Learning' has been of concern to the educationists.

In the last 20 years, there has been a conscious effort on the part of the planners and educators to use radio and television in education. A number of satellite communication projects have been undertaken and evaluated in terms of their utility in improving the quality of communication and in reducing the cost of education. According to Bates (1987)"...it is essential for teachers and educational managers to be involved in the planning and design of satellite education projects from the start. In addition, satellite projects need to be treated as part of a total education system, as many other technologies from radio, cable TV and telephones to print and audio cassettes may be involved..." (*Communication Research Trends* 1988/89:12

India is using satellite to broadcast educational programmes both for primary and higher education for about a decade. Two way audio and one way video introduces a yet another exciting application of satellite television in higher education. It is believed that television broadcast augmented with an audio tele-conferencing network makes two way audio and one way video interactive (White 1985). The major advantage is that it provides for an immediate feedback, and being distance neutral provides interactive access to students living in remote areas. It also makes higher education accessible to a larger section of students by drawing in subject experts or eminent scholars, who otherwise would not be available in the remote and rural colleges dotted all over the country.

There is a dilemma on the use of two way audio and one way video in higher education as several technical and non-technical problems in appropriate use of two way audio and one way video have been identified. Among these, of concern, are voice quality fluctuations, communicating with unseen participants and adapting to the changes in teaching role as well as the pacing of events imposed by the medium. This calls for an orchestrated effort on the part of educators and technologists for effectively utilizing satellite television and telephone for enriching higher education.

UGC Talk Back Experiment

It was in the light of this background, that a series of experiments have been thought to be carried out by ISRO, and "UGC Talk Back Experiment" is one of them. The principal collaborating agencies for the "UGC Talk Back Experiment" were Inter University Consortium for Educational Communication (IUCEC), University Grants Commission (UGC), Educational Media Research Centres, Audio Visual Research Centres, and Development and Educational Communication Unit (DECU), Space Applications Centre (SAC) and Delhi Earth Station (DES), of ISRO. Doordarshan transmitted the programmes in the UGC countrywide classroom time.

This experiment was conducted for six days between November 25 to 30, 1991, between 1 p.m. to 2 p.m. The experiment covered about six hours of total telecast and was conducted as a part of an ongoing telecast of University Grants Commission Countrywide classroom, meant for about three million undergraduate college students of the country. It aimed to enrich undergraduate students of about six thousand five hundred colleges. The experiment was configured as follows:

Teaching End was located in Delhi Earth Station (DES), Delhi. The term "Teaching End" implies to the location from where the educational programmes were telecast and where two *subject experts* per session were present for live answering of the questions received from the different participating centres based on the preceding telecast. The teaching end had one *anchor person* who compered the sessions on all six days. He also conducted the questions-answer sessions by invit-

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**Social Research Group, Space Applications Centre, Indian Space Research Organisation, P.O. SAC, Ahmedabad-380053.*

ing questions from receiving ends, directing the questions to subject experts for answering, and intervening whenever required.

Receiving End refers to the location where the participating undergraduate students had gathered. These students were from one of the three faculties namely Science, Arts and Commerce, having varying backgrounds. It was here that the programmes from the teaching end were viewed by the undergraduate students and the provision of asking questions through an STD telephone line or a satellite link were made. The Receiving End locations were Ahmedabad, Calcutta, Hyderabad, Imphal, Jodhpur, Madurai, Patiala and Roorkee. Jodhpur and Imphal were connected by Satellite link and other locations had STD telephone facility.

Bilingual moderators were present at each receiving end. Their main role was to establish an interface between the subject experts and the participating students. They identified the students/questions and when necessary translated them into English, that is before raising questions to the subject experts.

Talk Back refers to a system by which a student at the receiving end can call to the teaching end for asking questions through Satellite link or STD telephone.

Question-Answer Session is the period or time devoted to live questions asked by the students from the receiving ends using the talk back facility, and to live answers provided by the subjects experts from teaching end after every telecast of educational programme.

Telecast Schedule is the schedule followed for the telecast. Two programmes were telecast on each day. Each programme was followed by a question-answer session. The average duration of the programme was approximately 18-20 minutes and the average time for each talk-back session was 10 miniutes. The TV programmes were selected from the existing pool of different UGC media centres. Hence, some of these programmes were repeat telecasts. The programmes were transmitted from the Delhi Earth Station (DES) temporary studio and uplinked to INSAT 1-D for reception and rebroadcast.

The whole transmission could thus be received by any person with a television set at any place in the country, within the range of television signals during the experiment.

Some Observations

Some vital observations on the UGC talk back experiment are described. The observations stated are based on the evaluative study of the UGC talk back experiment conducted by the Social Research Group/DECU/ISRO, Ahmedabad. (Joshi S.R., Pande Manisha, and Joshi Madhavi : Satellite For Higher Education — An Evaluative Study of UGC Talk Back Experiment 1992. The charts, tables and findings are taken from this study.)

Time Allocation

A total of five hours and 32 minutes were devoted to this experiment. On an average 55 minutes of daily telecast time for six days were utilized. Out of 55 minutes of daily telecast, the telecast of the two pre-recorded programmes took 30 minutes. In this respect the major time (57.5 percent) was devoted to the programme telecast. On the other hand, everyday, not more than 14 minutes were devoted to question-answer sessions, averaging to about 7 minutes per session time available to the students of eight receiving ends to ask questions from the subject experts and get their answers. This worked out to be 25 percent of the total time. It is apparent that everyday more time was devoted to second question-answer session as compared to the first session. The ratio worked out to be 3:1. Chart 1 provides the component-wise break up of telecast time. An observable trend was the considerable increase in time for the talk back sessions on the last two days, which almost doubled from 10 minutes to 20 minutes as indicated in chart 2.

Question-Answer Sessions

The question-answer sessions were conducted more or less in the scheduled timings after the respective programme telecast. The question-answer session started and ended with one satellite linked receiving end — Jodhpur or Imphal. In between the questions from other receiving ends on STD telephone were invited. In latter case, the anchor person was informed about the constant three holding calls from the receiving ends on the earphone by the telephone operator at the control room of DES, and the questions were invited in

CHART 1

COMPONENT-WISE BREAKUP OF TELECAST TIME

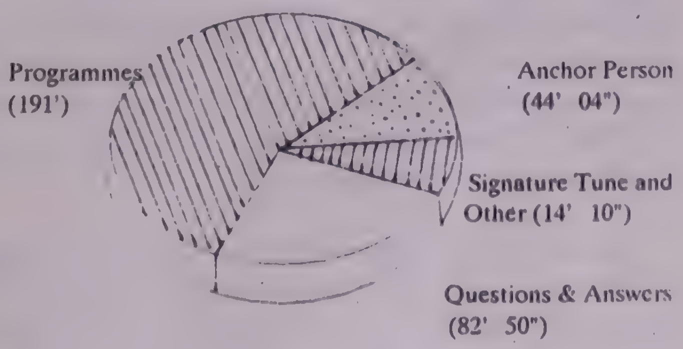
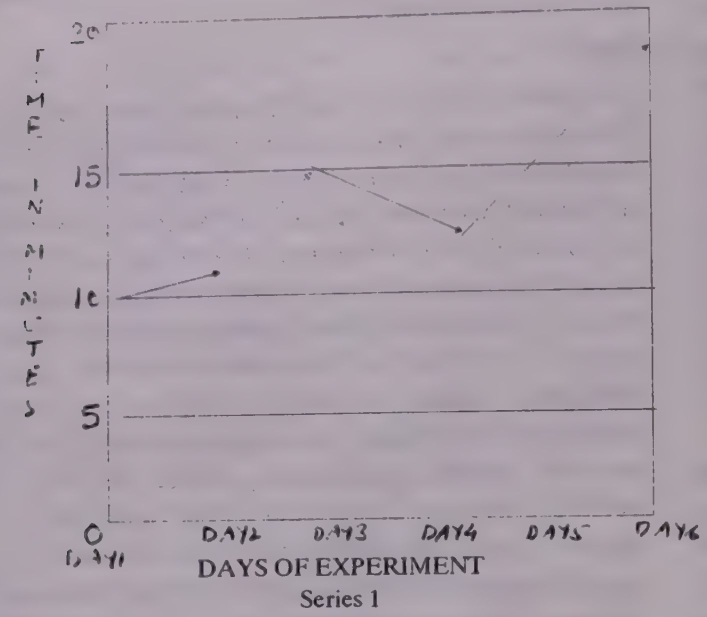


CHART 2
DAY WISE BREAKUP OF QUESTION & ANSWER SESSIONS



that order.

The questions received on STD phones ranged between 8 to 15. However, on most of the sessions 8 to 9 questions were received (refer table 1). On the first day (Ist question-answer session), although 15 calls were received, only 8 via STD materialised, of which only three could be heard and answered owing to sound disturbances. Out of two questions received via Satellite link, only one was answered.

On other question-answer sessions, the questions materialised ranged from 7 to 10, out of which, mostly all were answered. From second day of the experiment, the sound disturbance both via STD and Satellite link reduced considerably. The variation in questions received and answered was of 2 to 4 questions. Through Satellite link mostly two questions were received per session, and most of the time, both were answered except when audio disturbances occurred.

With regards to the satellite linked locations, the questions were heard clearly from Jodhpur, whereas, questions from Imphal were accompanied by a loud hiss, toning down the voice of the speaker. There was also the problem of understanding the accent of questions raised in English from Imphal.

Amongst the locations with STD facility, the audio quality was very good of questions from Roorkee and Patiala, followed by Hyderabad and Calcutta respectively. The questions from Madurai were accompanied constantly with background 'tap tap' sound and at times were not heard properly (refer Table 2).

All questions except two from Jodhpur (where the moderator intervened) were asked by the students themselves in English. On the last day, during the last session, the question was asked in Hindi from Jodhpur. The subject expert answered the question in English. On the whole, the medium of communication remained English throughout the experiment.

The anchor person intervened when questions from receiving ends were not clear by repeating or clarifying the same, or by switching over to the next receiving end when questions were not heard. Anchor person's intervention was also found when answers were to be supplemented by the other expert or when time did not permit further explanation. This was done occasionally by repeating or clarifying or opining. The anchor person did not have to sequence the questions, as the questions were taken as received by the operator. The same were heard aloud in the studio and answered by the subject experts.

Most of the subject experts were poised during the question-answer sessions except for few who showed tensed expression, especially, when questions were not heard properly. A couple of experts were found very lively and confident in front of the camera, behaving as if before the students. Most of the experts were sensitive in giving the other expert equal chance to answer. The questions were answered spontaneously without much pause. Some experts were too brief in answering and some explained in detail in the time provided. Sometimes, the experts also supplemented the answer given by the other expert.

It was observed that many times some experts wanted to intervene when the other expert was answering but could not do so as the next question was invited. Most of the question-answer sessions except for the first day (when questions were not heard) went smoothly, and the audio quality improved considerably as days followed.

Experience and Views of Subject Experts

There were in all 22 subject experts out of which 20 were interviewed and their experiences are highlighted as follows:

- All resource persons had acted as content experts in the production of the programmes, hence, most experts were media-experienced. They preferred live question-answer sessions over recorded ones as

Table 1

Frequency of Questions Received and Answered during the Question-Answer Sessions

Sr. No.	Locations/Days	Questions received session I	Answers Given session I	Questions received session II	Answers given session II
1.	Day 1				
	Satellite link	2	1	2	1
	STD	13	7	13	10
	Sub-Total	(15)	(8)	(15)	(11)
2.	Day 2				
	Satellite link	2	2	3	1
	STD	9	7	11	9
	Sub-Total	(11)	(9)	(14)	(10)
3.	Day 3				
	Satellite link	2	2	2	2
	STD	14	8	9	6
	Sub-Total	(16)	(10)	(11)	(8)
4.	Day 4				
	Satellite link	2	2	2	2
	STD	8	6	9	7
	Sub-Total	(10)	(8)	(11)	(9)
5.	Day 5				
	Satellite link	2	2	2	2
	STD	11	7	8	7
	Sub-Total	(13)	(9)	(10)	(9)
6.	Day 6				
	Satellite link	2	2	2	2
	STD	17	14	11	9
	Sub-Total	(19)	(16)	(13)	(11)
	Total				
	Satellite Link	12	11	13	10
	STD	72	49	61	48

Table 2

Frequency of Questions Asked and Answers Given by Receiving End

Sr. No.	Sessions/day		SetelliteLink		STD Telephone					
			Jodhpur	Imphal	Roorkee	Patiala	Calcutta	Hyderabad	Ahmedabad	Madurai
1.	Day 1									
	Session	1	1	1*	2+1*	1*	1	1*	1*	—
	Session	2	2	1*		—	1.+2	1	1.+1	1.+1*
2.	Day2									
	Session	1	1	1.	1.	1	1+1*	1	2	1
	Session	2	1	1.	2	1	2+1.	1	—	1*+1
3.	Day 3									
	Session	1	1	1	1*+1	3	2	2	1*	1.
	Session	2	1	1.	2	—	1+1*	1.+1*	1.+1	—
4.	Day 4									
	Session	1	1	1	1	—	1+1.	1	1	1.
	Session	2	1	1	1	2	1	1	1	1.
5.	Day 5									
	Session	1	1	1.	2	—	—	1.	1	2.
	Session	2	1	1.	2	2	—	1+1.	1	—
6.	Day 6									
	Session	1	1.	1	2	2	1+1.	1.+2	2	2.+1
	Session	2	1	1	2	1	2.	2	1.	1

* — Questions received but not heard and answered.

. — Questions not very audible but answered.

such sessions are likely to be lively, spontaneous, exciting, instant and challenging. Moreover, it gives a feeling of being a live teacher of the nation.

- With regards to difficulties faced during Question-Answer Sessions, 30 percent of subject experts did not face any difficulty, whereas, 70 percent of experts reported constraints of which the most felt constraints were:
  - Audio disturbances due to which the subject experts could not hear the question clearly.
  - Time constraint due to which the questions could not be answered to the experts' satisfaction.
  - Lack of provision for illustrating the answers with the help of visuals that could have facilitated better explanation and clarification.
- Several experiences were revealed with regard to the talk back. More than half (60 percent) of experts were satisfied 'to some extent' with their answers to the questions. 25 percent were satisfied and 15 percent were not found to be satisfied. The reasons given by experts who were less satisfied were :
  - Time too less to answer the particular question.
  - No facility to answer with visual illustrations.
  - No way to assure whether students are convinced with the given answers.
  - Due to audio disturbances, could not hear the questions properly.
  - More attention was focussed on connecting the locations to receive questions.
- Fulfilment of expectations of talk back differed among the subject experts. Where 35 percent felt their expectations were fulfilled, 40% felt their expectations were fulfilled only to some extent and 25 percent felt that their expectations were not fulfilled. The reasons reported for lack of fulfilment or no fulfilment were :
  - Time shortage in answering questions.
  - Questions not audible due to technical-audio disturbances at times.
- Regarding the studio setting, 45 percent experts were comfortable in the studio setting, 55 percent were comfortable only to some extent. They felt that the studio needs to be improved, modernised and should be sound proof.
- Subject experts expressed diverse opinions regarding the questions asked by the students. 25 percent found the questions elementary, basic and very general in nature. 20 percent experts found the questions to be intelligent, insightful, relevant and satisfactory respectively. 10 percent found the questions not clear and repetitive, and out of context. Majority of experts felt that the questions should be screened properly at the receiving ends so as to receive more focussed questions. The general impression was that the questions were broad, requiring more explanation, that was not possible to provide due to limited time during question-answer sessions.
- While half of the experts thought training was not required, the other half thought training was required to induct subject experts to effectively perform in the talk back or question-answer sessions. Simulations in form of mock sessions were thought to be effective. The subject experts thought that training about television functioning would help them to learn to perform in front of TV camera and would also help them to manage time, and enable them to organise rounded and short answers quickly.
- The subject experts felt that talk back can only be a supplement to the face to face interaction as in the classroom. Though talk back reaches a large number of students, provides larger range of question-answers and makes the session lively, it cannot substitute classroom interaction. The subject experts argued that talk back does not allow for discussion and continuous feedback, cannot assure whether students have understood the point made and are convinced with the given answers. It cannot also allow constant exchange of dialogues. All these qualities are inherent in the face to face classroom interaction. Moreover, the physical presence of students makes the interaction more lively and meaningful.
- Regarding the utility and limitations of the talk back the following views were expressed by the subject experts :
  - It has immense potential to reach the large, spatially distributed students at a time in the country.
  - Can be very effective, if improved, in terms of sound quality, studio facility and getting more feedback from students.
  - Can be readily used if the time and expenditure aspects are within certain limits.
  - The large viewership of talk back can generate a lot of interaction, and can motivate more students to view programmes and participate in the session.
  - With the coming up of INSAT II system, there can be a separate educational channel where talk back can be used extensively.
  - Talk back is much more meaningful than just viewing the programme, as millions of students in diverse regions feel involved and have access to answers. This helps to develop their thinking process.
  - Time is a major constraint as answers cannot be given to one's satisfaction.

- * There is no provision for visuals to illustrate for clarifications.
- * Audio quality if poor, the question-answer session looses its essence.
- * Students not knowing English language may not get a chance to ask questions. Due to varying English pronunciations the questions and answers are not comprehended in the same manner by all.
- * Further feedback or discussion is not possible.
- * Immense expenditure incurred on telecast studio, invited experts and telephones is not worth for such short duration question-answer sessions.
- * It cannot be a straight substitute to face to face interaction.

- The experts provided several suggestions to improve the talk back. Some of these are as follows :
  - * A production/telecast configuration should be provided where the student asking question can be seen in a quarter screen (as during election days). It would be meaningful as student's reactions to answers can be seen.
  - * Question-answer session duration should be increased considerably. Preferably it should be two times more than the programme duration or minimum of 45 minutes.
  - * Audio system needs to be improved considerably so that all questions are heard clearly, without echo or any background noise, both with regards to telephone lines and satellite links.
  - * Questions can also be invited in written form, through telex or fax or mail, and experts can react and clarify the issues in a discussion mode.
  - * The questions need to be screened at receiving ends so that focussed, insightful, and relevant questions are selected and answers can be given. Further feedback can also be obtained live and the required clarifications can be provided.
  - * Specific topics can be selected on periodic basis, and once a fortnight the talk back session should be organised, that revolves on the given subject.
  - * Interaction mode like discussion would be more useful and meaningful.
  - * Feedback regarding answers given should be received by subject experts from students through mail directly or through UGC. It was expressed that this is very important but usually neglected. Many times letters even when written by viewers do not reach the subject experts.
  - * The questions should be invited in regional languages also with appropriate translation facility. This will take care of language diversity, and give all students an opportunity to participate.
  - * While this experiment was conducted in a make-shift studio in the operational phase the studio set up needs to be advance technology-based, and sophisticated with sound proofing. The organisation of the studio should be like a classroom as most subject experts are used to classroom teaching.

Students' Views and Experiences

The participating students expressed many views and opinions on the experiment and also made suggestions to improve its utility as highlighted below :

- It was felt that this mode of teaching helps students to obtain specialised knowledge from experts with whom, otherwise, they do not have access to interact with. The tele-teaching was described as 'exciting' and 'a good beginning'. On the other hand, a considerable number of students felt that as compared to teleteaching, the classroom teaching was more lively as each student gets equal chance to ask multiple and supplementary questions. Another point made was that the questions were diverse, asked from different receiving ends and therefore lacked continuity. Another point that emerged was the medium of experiment being English posed as a barrier in communication for 32.5 percent students.
- The students who had used the talk back facility expressed some difficulties in using the new technology :
  - * It was felt that the time allotted for talk back was too short and there should be more time given so that everybody gets a chance to ask questions.
  - * The use of English language acted as a barrier for those students who were not very familiar with the language.
  - * Some students indicated that there were audio disturbances and occasional video fluctuations. The questions from the other receiving ends could not be heard properly. In a couple of locations there was also movement of people within viewing room causing some disturbance.
- In question-answer sessions, some of the questions were found out of context and repetitive and some answers given were found not satisfactory. The most common reason for not asking a question was hesitation, followed by language problem.
- One recurring suggestion was that there should be more time allotted for the question-answer session so that everybody can be given a chance to ask a

question and that the number of receiving ends can be reduced.

It was suggested that teleteaching be made supplementary to the classroom teaching. It was felt that while teleteaching establishes interaction with the students and the experts, it does not create a close sense of involvement between the students and teachers. It was also suggested that there should be specific programmes for specific subject groups instead of a common programme for all.

Conclusions and Implications

On the whole, except very minor initial teething troubles, the experiment was successful in technical terms. Both the engineering and production staff performed efficiently before, during and after the experiment. The experiment generated great amount of expectations and excitement among the participating students. So was the case with moderators, subject experts and the anchor person. Both at teaching and receiving ends, the telecast and question-answer sessions went smoothly. The technical demonstration of the experiment gave the confidence that such a system is feasible and can be translated into an operational system for teleteaching and teleconferencing in higher education, provided appropriate infrastructural facilities and financial allocations are made available.

A recurring demand by everyone, be it students, subject experts, moderators or anchor person participating in the experiment was "more time" for question-answer session. By and large it was suggested that the question-answer session should be double the time allocated to programme telecast. It was thought that this will help overcome the delayed feedback limitation of distance teaching, and will help students get instant answers to their questions. They wanted the questions to be selected by moderators at the receiving ends, so that more relevant, focussed, insightful and probing questions are received at the teaching end. This was suggested in order to get appropriate answers in a limited time.

As the pedagogy of interactive telecast seem to be different from the normal broadcast, the television programmes should be especially produced to be utilized for live question-answer sessions. This will enable to have focussed theme and specific subject matter content. This will then facilitate focussed, relevant and to the point question-answer sessions, rather than receiving broad and general questions from students causing difficulty in giving rounded and specific answers in a limited time.

English was the medium of talk back experiment. Even then a large number of questions were raised by students in their Indian languages, translated in English by the moderators. This assumes great importance when one takes into consideration that most of the participating students were selected from English medium colleges. It seems that provision for multilingual talk back configuration will be required in future for using such a system effectively and meaningfully.

While there was a greater involvement of human resources at an experimental level, in an operational system, the same can be reduced and systematized for future use. During this experiment, a great deal of fanfare and enthusiasm was observed. It is expected that once the novelty effect is over, such a talk back facility will be used for regular two way interaction with less of fanfare.

Consensus was found on the 'talk back' system's immense potential to help reduce physical distances and bring together students, moderators, and experts to share information and knowledge. This would help to provide immediate interaction and feedback, thereby making distance education more meaningful. Even if all students are not able to ask questions, they can have access to answers and such sharing can help further stimulate the thinking process.

[The views expressed in the paper are of the author and not necessarily of the organisation].

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Harnessing Information Technology for Total Literacy

P. Thrimurthy*

1. Introduction

Gujarat is a highly industrial State where most of the people are busy in more than one assignment. The poor are involved in several job tasks for increasing their income. All the members of the family, the old and the young alike, are busy for most of the time in a day and are unable to spare time for education. The adult education centres attract people of all ages but the initial problem is on the time span that need to be spent on making the participants to understand the methodology of writing alphabets.

In the present conventional teaching through the blackboard and making people to write all the alphabets in Gujarati Language, it is taking any where between 30 to 40 days. With this overhead, the noble idea of bringing up the literacy rate in Gujarat is not giving high yield.

To save the situation, there has been a need to speed up the process of familiarizing "reading & writing skills" and to motivate the learners for further lessons to achieve total literacy.

Having identified the problem, we started exploring if computer could assist in "solving" this problem. We report with great satisfaction that computer can help the masses in raising the literacy rate.

2. Software Implementation

2.1 Alphabets of Gujarati Language (Familiarity) :

2.1.1 System displays each letter (which is enlarged through graphics to cover the maximum portion) on Visual Display unit.

2.1.2 System facilitates advancing to the next alphabet on pressing the friendly cursor keys.

2.1.3 One can go back to display of previous alphabets also.

2.1.4 Cyclic facility helps in getting the alphabets of Gujarati Language (initial to the last) displayed in the forward and backward order. This facilitates in getting the required familiarity on all the letters and assisting in identifying the letters.

2.2 Teaching the Methodology of Writing Alphabets (letters) :

2.2.1 System displays a letter in complete form and allows the participant to have a look at the letter which the participant has to form (create).

2.2.2 On pressing the cursor key, system starts drawing in slow motion a portion of the letter and waits for the response.

2.2.3 On pressing again the cursor key, system extends drawing the second portion of the letter in slow motion and waits for the response.

2.2.4 The process of drawing the whole letter in parts is displayed in four steps.

2.2.5 The process of writing (drawing) each letter can be repeated again and again. In fact, one can press a key to show the redrawing procedure at any step.

2.2.6 The process continues for all the letters.

2.3 Drill & Practice

2.3.1 System displays a letter and waits for the participant to copy that letter.

2.3.2 This process is continued for all the letters.

Here is a variation. If the participants are in masses and not sitting on the computer, the instructor waits till the participant writes the letter shown on the screen.

If the participant by chance is sitting on the computer, he is given the Gujarati Keyboard layout and he is asked to enter the corresponding key.

2.4 Writing Words

Fifteen lessons are designed, each lesson containing words which are familiar in the village atmosphere.

While first lesson contains words without "maatras". The complexity is increased from lesson to lesson with words selected in such a way that the participants can learn easily in the smooth pipeline.

In fact, the selection of words to each lesson was experimented at several places & standardized. Participants are given chance to read the words and write these words. Variation is provided to give hands on practice wherever it is possible.

3. Advantages

3.1 Initial problems of motivating the participants on correct writing skills are minimized as the methodology of writing is demonstrated.

3.2 Quick repetition of the "process of writing methodology" enhances understanding.

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3.3 Participants are exposed to good unique writing methodology which will help them to master good writing habits.

3.4 The whole process is quite quick and efficient.

3.5 The participants can go on, with their own pace.

3.6 Slow learners could be assisted again and again.

3.7 Process provides a great stimulation to the learners.

4. Epilogue

Regional Language Teaching differs from place to place. To come out of the constraints in the Gujarati Language Teaching, we attempted to design and develop such a Natural Language awareness tool. Govt. statistics on estimated time limits for achieving total literacy can be condensed drastically. Our experience has yielded very good results. On one of the sites, 75 people could be made to write the alphabets in just three days.

Yes, it was a proud moment to view an illiterate lady in India using computer for improving her lifestyle. A great stimulation to the IT professionals in the country.

After hearing his success story, many elders enquired if we can bring out similar software for HINDI language teaching. The same is in pipeline at present.

We are now looking for volunteers who could take up the challenge of arranging camps and make their respective districts cent per cent literate.

Mahatma's dream of total literacy could be achieved with the help of Information Technology.

WHY READ?

(Contd. from page 1)

'The Idea of a Christian Society' might have had a prophetic vision of many a young writer of our own decade when he wrote :

> "What, .in the kind of society to which we are approximating will be a democratic organization of culture? To substitute for democratic, a term which for me has greater concreteness, I should say that the society which is coming into existence, and which is advancing in every country whether democratic or totalitarian is a lower middle class society; I should expect the culture of the twentieth century to belong to the lower middle class as that of the Victorian age belonged to the upper middle class or commercial aristocracy."

But what does seem to be true is that a lot of current writing reflects a dissatisfaction with personal status, a social restlessness, and an eagerness for short term, material satisfaction that does mirror, perhaps, a wide and deep discontentedness not so much with the idea of a class structure as such as with there being so little room at the top of it. And that discontentedness can lead to a rather cheap cynicism, a cult of vulgar sophistication, a resultant of the self assurance of others which masks itself as a refusal to be taken in. It would be almost impossible, for instance today for somebody, asked what the value of the literary culture to life is, to give such a sturdily honest answer as Dr. Johnson's :

> "The greater part of readers, instead of blaming us for passing trifles, will wonder that on trifles so much labour is expanded with such importance of debate, and such solemnity of diction. To these, I answer with confidence, that they are judging of an art they do not understand; yet cannot much reproach them with their ignorance, nor promise that they would become in general by learning criticism, more useful, happier or wiser."

Dr. Johnson was talking of the discipline of textual criticism, but his answer applies to literary culture in a broader sense. People who possess it are not necessarily more useful, happier, wiser than other people; but they do not possess a set of resources within themselves, which they would not without; though the satisfaction of inner resources, to people who lack them, is almost incommunicable. What can be said in the end, perhaps, is that the man who is taking up literary studies mainly with the idea of putting them to some selfishly practical use, or of boosting his own self-importance through them, would be well-advised, even from his point of view, to turn his energies elsewhere. Men are strong only so long as they represent a strong idea of reading. They become powerless when they oppose it.

ADULT EDUCATION – SOME BASIC ISSUES

Dhaneswar Harichandan*

The Background

The most urgent national need of our country today is the education of the adults. With a colossal illiteracy of 48 percent it is really impossible to achieve anything remarkable by way of progress—social, economic, or political. An adult is the chief unit of the society, and the advancement of the family depends upon him. Educated adults will undoubtedly want the education of their children. Therefore, if the education of the children is important for the future welfare of the country, education of adults is very necessary. Unfortunately in India, adult education has always been treated as something marginal.

Who is an Adult?

"Adult" & "Adult Education" are defined variously in different countries. In USA an adult is defined as a person of approximately eighteen years of age and even older. In England the Education Act of 1944 provides for full time compulsory education till the age of fifteen and for part-time education till the age of eighteen. All persons above that age are considered as adults. We may define the age for adulthood, in India, at a few years higher than that at which compulsory education ends. In India where compulsory education is provided upto the age of eleven, fourteen may be taken as the age of adulthood.

The Concept of Adult Education

Adult Education denotes the entire body of organised educational processes whereby adults develop their abilities, enrich their knowledge, improve their technical or professional qualifications and bring about changes in their attitude. It refers to any learning activity deliberately designed for adults. Its ambit is taken as spanning non-vocational, vocational, general, formal, non-formal and community education and it is not restricted to any particular level. However, the Policy Statement of the Govt. of India visualised that Adult Education Programmes will be organised with literacy as an indispensable component with a view to providing age group 15-35, skills for self-directed learning leading to self-reliance and in their own development. The Adult Education Programme has the following three main dimensions :

1. Literacy (reading + writing), numeracy (simple arithmetic) & technocracy (technical knowhow);
2. Job-efficiency or skill proficiency; and
3. General awareness of the environmental reality (social, cultural, economic and political) around them. It includes the awareness of the problems of population, pollution & nutrition.

Development of Adult Education

Mahatma Gandhi, who had been talking about illiteracy as "a sin & a shame" felt that this was the right moment to devote special attention to the task of the eradication of illiteracy. Regional bodies with the objective of promoting adult education had been established. After the formation of popular ministries in the year 1937, a preparatory convention was held in 1938 & Indian Adult Education Association was formally inaugurated on May 22, 1939, the year 1989 being the Golden Jubilee year.

After the attainment of independence in 1947, the need for adult education was felt even more. The very concept of adult education underwent a significant change. Now adult education includes (i) Education for literacy, (ii) Education for citizenship, (iii) Education for Productivity, and iv) Education for Social Service.

Later on, Dr. M.S. Mehta, the President of India Adult Centre, took a more pragmatic view of the situation. He emphasised literacy had to be more than 3 R's, it had to become the three 'F's—functional literacy, food, and family.

Speaking in Parliament on April 17, 1977, the then Education Minister had declared that the highest priority in educational planning would be accorded to the universalisation of elementary and adult education. Ultimately the Policy Statement on Adult Education was prepared, and the National Adult Education Programme (NAEP) was launched on October 2, 1978. Adult Education has perhaps attracted greater attention during those two years (1977-1979) than ever before. In the sixth five year plan (1978-83) it constitutes one of the minimum needs of the poorest sections of the society. The plan declares that, the vigilance of the adults alone can ensure that the benefits of various laws, policies and schemes designed to benefit them to produce their intended effect. The NAEP is thus the educational imperative of a national effort to provide a

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fair deal to those in greatest need of it.

Very recently National Literacy Mission (NLM) launched by the Prime Minister is now being implemented. This envisages a time-bound programme for eradicating illiteracy through Sampoorna Saksharta (Total Literacy) Programme from among 80 million adults in the age group of 15-35 by March 31, 1995. The NLM had been sanctioned a budget of Rs.550 crores to be spent before 1990. With the setting up of Jan Shiksha Nilayam (JSN), it is expected to respond to the needs of post-literacy follow up and continuing education.

The universities, once considered as citadels of formal education, have now started providing courses of shorter durations for various types of target groups. The universities have set up centres for Adult, Continuing and Extension Education Programmes. The University Grants Commission provides assistance for this purpose. Adult education is also provided by the National Service Scheme (NSS) volunteers. Besides, various social and cultural bodies do a yeomens service for spreading adult literacy.

The National Policy on Education 1986 gives highest priority to solving the problems of illiteracy. It envisages that illiteracy at least in the age group of 15-35 should be eradicated and 100 percent of the children in the age group of 6-11 should be enrolled by 1990. Opportunities will be provided to the youths, housewives, agricultural and industrial workers and professionals to continue the education of their choice at the pace suited to them. The future thrust will be in the direction of open and distance learning. Concerted efforts will be made to harness various research agencies to improve the pedagogical aspects of adult literacy.

Methods of Adult Education

Munroe, in the "Encyclopaedia of Educational Research" has classified the chief methods of teaching the adults into four categories.

1. The learner dominated method incorporating :
    (a) Drill and practice method.
    (b) Trial and Error Method.
    (c) Self Study and Library Work.
    (d) Survey Work.
    (e) Questionnaire and Field Trip.
2. The teacher dominated method which includes :
    (a) Lecture Method
    (b) Demonstration Method
    (c) Counselling Method
    (d) Case Study Method
3. The cooperative method which includes :
    (a) Apprenticeship
    (b) Group Discussion.
4. The Activity Method which includes :
    (a) Organising Camps.
    (b) Social Service Activities and Tournaments
    (c) Arranging exhibitions, cultural and recreational activities.

However, in our context, there is no one ideal methodology that can be uniformally used. Nor can we borrow from the western countries. Hence we have to depend upon evolving our own methodology. The methods adopted in our country are through the use of audio, visual, and audio-visual aids like radio, taperecorder, charts, pictures, flash cards, leaflets, flannel graphs, TV and films. Sometimes even the adult education workers resort to lecture method. Sometimes on the sands in the river bank, the adults are taught. There is no set pattern of teaching. It is very flexible and informal as well.

Problems of Adult Education

1. *Apathy and non-cooperation among the adult masses* : Adults feel that it is of no use to learn at a ripe age. There is extreme orthodoxy in several backward areas and the adults flatly refuse to cooperate with the adult education workers. Certain other reasons which are responsible for apathy of adult masses are the (a) Lack of motivation, (b) Lack of leisure, (c) Peace of Mind, and (d) Physical comfort.

2. *Problem of adult education workers* : Most of adult education teachers are ill-trained and teenagers. They do not have the professional skills of approaching the illiterate adults. They also do not have knowledge of adult and educational psychology.

3. *Problem of equipment* : Most of the centres do not have properly equipped libraries, reading rooms, suitable textbooks, audio-visual aids, attractive charts and pictures.

4. *Problem of social backwardness* : In most parts of India, poverty, illiteracy and disease reign supreme. The social backwardness of the people is the stumbling block in the way of new, ambitious progressive programmes of adult education. People still suffer from caste problems and shortage of adequate number of women social education workers.

5. *Problem of suitable literature* : Easy and interesting

books are required for self study by adults. While preparing literature following things must be kept in mind :

- i) Aims of adult education
- ii) Distinction of age and sex
- iii) Simplicity and brevity
- iv) Demand and needs.

6. *Problem of vocational training :* If adult education is woven around occupation, the adults are more receptive. They see in it the utility of learning. Adult education workers are not proficient in the vocations of the adults. An illiterate farmer knows more of agriculture than the adult education worker.

7. *Problem of finance* : This impedes the adult education programmes. Educated people should come forward and raise the slogan "Each one teach one", as the Govt. can't spare huge sums of money needed for the success of adult education schemes. Hence cooperation from the voluntary organisations and private agencies should be sought.

8. *Problem of follow up programmes* : Sometimes adult education classes are held with all regularity and vigour. A few adults educated in such centres, soon lapse into illiteracy because of lack of follow-up programme. It is suggested that continuing and correspondence courses should play important role in this direction.

Recommendation

The aims of adult education is not to give the learner a better place in the labour/job market, but to give him an opportunity of living a fuller and more interesting life, and to equip him for a more intelligent citizenship. Considering the fact that more people are to be educated, we should develop need based curriculum which will generate interest in the minds of the adults keeping in view the requirements of the locality. The adult education instructors should be well trained and firmly committed to the cause of eradicating illiteracy. More and more number of voluntary agencies with some financial assistance should be pressed into service for adult literacy. And certainly then, we will achieve our targets and the trained adult will proceed to function as an educated enlightened man.

MOTHER TERESA WOMEN'S UNIVERSITY
13, RACE COURSE ROAD, GUINDY, MADRAS-600 032

NOTIFICATION NO.76

Applications in the prescribed form are invited from **WOMEN** Candidates only, for the Post of **REGISTRAR.**

Qualifications and Experience

1. First or Second class Master's Degree of recognised University with Ph.D Degree in any discipline.
2. Minimum total 15 years of experience involving teaching/research/administration.
3. The applicant should be an academician not lower in rank than that of a University Professor.

(AGE: Not below 45 years and not above 55 years as on the date of advertisement)

NOTE:

(i) The University reserves the right to shortlist the Candidates.
(ii) The University also reserves the right to fill-up or not to fill-up the Post
(iii) Candidates already in service should send their application through proper channel or they should produce "**No Objection Certificate**" from the employer at the time of interview, if called.

Application forms will not be issued after 22/6/1992 and applications received after 26/6/1992 will not be entertained.

Applications can be had from the Registrar, Mother Teresa Women's University, Madras-32, on requisition accompanied by a State Bank Demand Draft for Rs.20 drawn in favour of the Registrar, Mother Teresa Women's University, Madras-32, and a self-addressed envelope stamped to the value of Rs.3.

REGISTRAR

Vallabhbhai Patel Chest Institute

UNIVERSITY OF DELHI : DELHI-7

WANTED : **Lecturers – 5** in the scale of Rs. 2200-75-2800-100-4000 plus Non-Practising Allowance and other usual allowances admissible according to rules in force from time to time.

Qualifications : Good academic record with a first or high second class Master's degree or an equivalent degree of a foreign University in the subject concerned (Note : Second Class would mean at least 50% marks in the subject or equivalent grade).

1. **Clinical Research :** medical graduate with postgraduate qualifications in Medicine/Chest Diseases such as M.D./M.Sc./Ph.D./D.Sc./M.A.M.S./M.R.C.P./U.S. Speciality Board with teaching/research experience as Tutor/Demonstrator/Research Officer for 3 years of which one year should be after postgraduate qualifications in a Medical College or a postgraduate medical/allied Institute.

2. **Medical Mycology :** Medical or non-medical graduate with postgraduate qualifications in Medical Mycology/Microbiology such as M.D./M.Sc./Ph.D./D.Sc./M.A.M.S./M.R.C.P./U.S. Speciality Board with teaching/research experience as Tutor/Demonstrator/Research Officer for 3 years of which one year should be after postgraduate qualifications in a Medical College or a postgraduate medical/allied Institute.

3. **Physiology :** Medical or non-medical graduate with post- graduate qualifications in Physiology such as M.D./M.Sc./Ph.D./D.Sc./M.A.M.S./M.R.C.P./U.S. Speciality Board with teaching/research experience as Tutor/Demonstrator/Research Officer for 3 years of which one year should be after postgraduate qualifications in a Medical College or a postgraduate medical/allied Institute.

4. **Microbiology :** Medical or non-medical graduate with post- graduate qualifications in Microbiology such as M.D./M.Sc./Ph.D./D.Sc./M.A.M.S./M.R.C.P./U.S. Speciality Board with teaching/research experience as Tutor/Demonstrator/Research Officer for 3 years of which one year should be after postgraduate qualifications in a Medical College or a postgraduate medical/allied Institute.

5. **Pharmacology :** Medical or non-medical graduate with post- graduate qualifications in Pharmacology such as M.D./M.Sc./Ph.D./D.Sc./M.A.M.S./M.R.C.P./U.S. Speciality Board with teaching/research experience as Tutor/Demonstrator/Research Officer for 3 years of which one year should be after postgraduate qualifications in a Medical College or a postgraduate medical/allied Institute.

Applications in the prescribed form which can be had from the Institute either personally or by sending a self-addressed envelope of 23x10 cm. size and with postage stamp worth Rs. 8 to cover postage should reach the Director of the Institute by **29th June, 1992.** Candidates called for interview from outstations will be given financial assistance in the shape of one single second class rail fare to and fro by the shortest route.

NOTE : It will be open to the Institute to consider the names of suitable candidates who may not have applied in respect of above posts. 2. Relaxation of any of the qualifications may be made in exceptional cases on the recommendations of the Selection Committee. 3. Persons already employed should send their applications through proper channel. 4. Canvassing in any form by or on behalf of the candidate will disqualify him/her. 5. The Institute reserves the right not to fill up the vacancies advertised if the circumstances so warrant.

PLANNING FOR TEACHING

A SYSTEMATIC APPROACH

R.P. Shukla*

Introduction

One of the most common conceptions of the role of a teacher is that of a giver of information, perhaps because most of the instruction in higher education traditionally has involved the presentation of information. The process begins with the teacher, who has been seen as the prime source of wisdom. If all goes well, the process ends with the student, who has often been a passive receiver. Teaching has been described as the transmission of the material from teacher's note-book to a student's note-book, bypassing the minds of both. However, the teachers' role is changing at higher education level also. As new resources for learning become available many of which are designed for individual use, new options for teaching are offered. New buildings and facilities are being built to include television, electronic learning laboratories and computers etc. This increases the number of alternatives for teachers. The process of planning, organizing, coordinating and evaluating the people, facilities and resources involved in the process of teaching and learning in which events are ordered over time is usually systematic, that is, "according to an orderly scheme marked by...orderly procedure observing a plan"(Webster's Dictionary).

What is a system?

Every human being is a system. Body temperature, heart beat rate, blood pressure and other attributes are regulated and maintained within certain limits by specific organs. These organs are subsystems of the total human system. They must function if human is to survive, furthermore, they must function in a complex interrelationship. A change in one part of the human body is frequently accompanied by changes in many other parts. By doing exercises we become very hot, the heart begins pumping an increased quantity of blood. Here the system must be protected from drastic environmental changes and parts of the system must adapt to this environmental change in order for the total system (i.e. human) to survive; for example, one's blood may circulate at a lower rate because the system needs to conserve energy. He may put on a coat before going outdoors as his brain tells his muscles to put on the coat and thus body system solves this problem. All the subsystems work together toward the solution of the problem confronting the total system.

The systematic approach

Systematic approach is nothing more nor less than a sophisticated process for identifying and solving problems. The approach is based on the premise that any organization of people or things is a system made up of elements. Each element has its own functions and goals. The goal of the total system is attained only when all the elements are integrated in an effective and efficient pattern. In a systematic approach, the whole is always considered more important than the mere sum of its parts, the process more vital than the several elements. Above all, the primary concern is for the individual learner for whom the system is designed. The student is at the core of the systematic approach. Application of the systematic approach to classroom teaching at higher education level has been avoided. However, it is my conviction that the vast majority of classroom teachers are not provided with the time, the money or the resources to use something as complex as a systematic approach. Even if the system and all its component subsystems were thoroughly analysed and defined, the synthesis which teaching and learning in a college or university situation demand would be overwhelming for nearly all, if not all classroom teachers today. They simply cannot sufficiently control all the variables or elements which comprise a total teaching-learning situation.

The systematic approach discussed here is an attempt at a method of systematically planning teaching. It is a guideline which can be used as a checklist in planning for teaching. It shows the relationship of one element to another and offers a sequential pattern that can be developed into a plan for teaching. It includes the following ten elements:

1. Specification of objectives,
2. Selection of content,
3. The assessment of entering behaviour,

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4. The strategy which will be employed,
5. The organization of students into groups,
6. The allocation of time,
7. The allocation of learning space,
8. The selection of appropriate learning resources,
9. The evaluation of teacher and learner performance, and
10. An analysis of feedback by the teacher & the learner.

Objectives-content

Theoretically, objectives should be specified first, and then content should be selected that will assist the learner in attaining those objectives. In practice, however, the content is frequently specified without objectives. The diagrammatic model of the systematic approach shows the nature of the interaction between content and objectives.

A good objective exhibits four characteristics :

1. It describes something which the student does or produces;

2. It states a behaviour or a product of the students' behaviour;

3. It states the conditions under which the behaviour is to occur; and

4. It states the standard which defines whether or not the objective has been obtained.

Assessment of entering behaviour

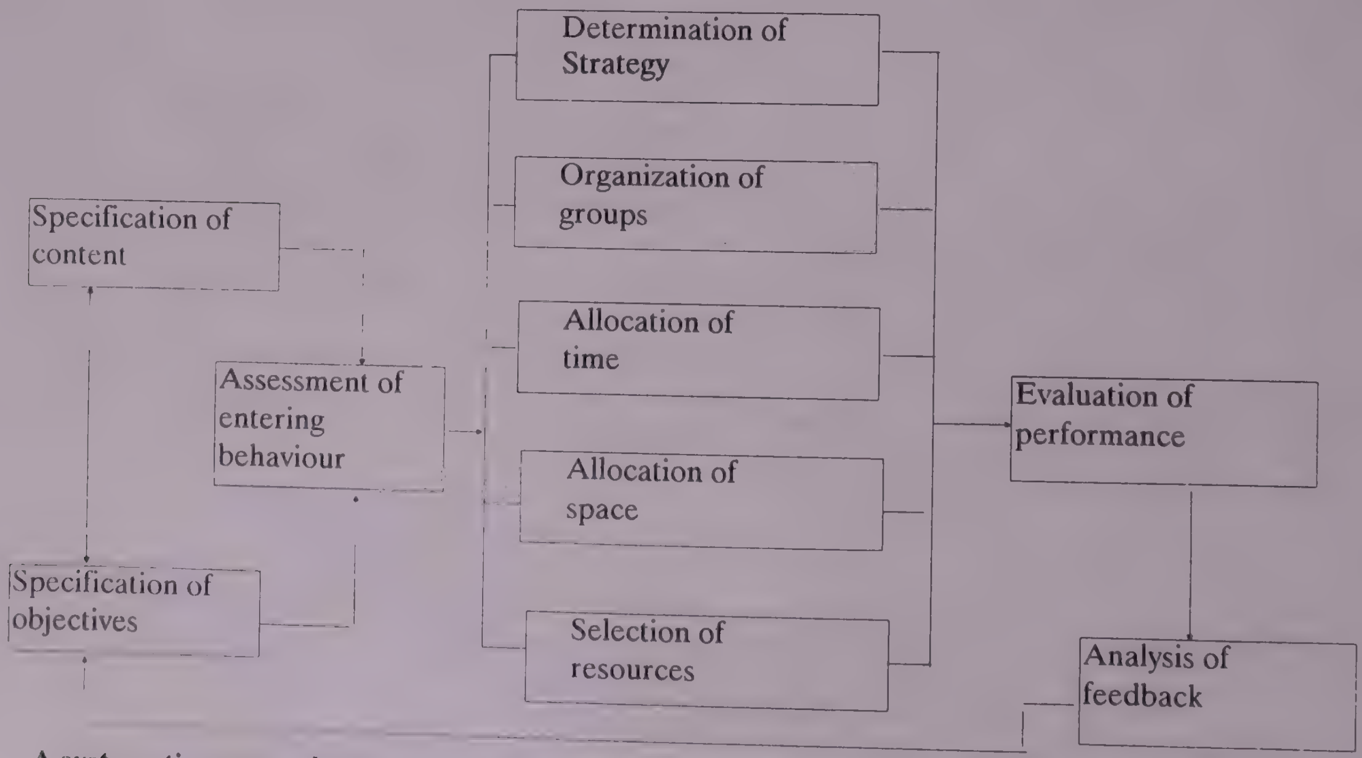
Unless the teacher knows the extent and sophistication of students' knowledge, the teacher must plan course for an average student. Psychologists have written about individual differences for many decades, but till recently not much has been done about these differences at higher education level. There are a number of ways of analysing individual differences and to assess students entering behaviour.

1. Use of available records: Students' cumulative records and their grades show performance in courses over their education careers. Any information concerning student potential or past performance may be useful.

2. Teacher designed pretests : Teachers may design a pretest to determine the students' achievement in the subject to be pursued. This screening device might indicate a student's ability to define basic terms in the subject area. It can be a good practice to organize the course in units and to administer a pretest before each unit. This procedure serves as a check on previous learning as well as a guide for teachers and and students in planning future learning experiences.

Determination of strategy & technique

A strategy is the teacher's approach to using infor-



A systematic approach to instruction (as developed in Vernon S. Gerlach and Donald P Ely (2nd Ed) Teaching & Media: A Systematic approach, P.11).

mation, selecting resources and defining the role of the students. The traditional term method is replaced by the term instructional strategies. It includes specific practices used to accomplish a teaching objective. The two approaches out of many seem to be most important. Expository approach—the more traditional and dominating approach—and inquiry approach need to be adopted.

1. Expository approach: In this the teacher presents information to the student. The sources of information most frequently used are the textbook, reference materials and the personal experiences of the teachers. The most frequently used technique is the lecture. It is suggested here that lecture added with discussion and seminar technique probably be a better technique to direct students to a predetermined goal. The students are examined and evaluated on other abilities to generate knowledge, process it and originally transmit the knowledge.

2. Inquiry approach: In this mode, the teacher assumes the role of facilitator of learning experiences and arranges conditions in such a manner that students raise questions about topic or event or phenomena. A project work, assignment and dissertations can be given to the students and students may be encouraged to refer textbooks, documents, statistical data, and publications pertaining to the topic. The students attempt to organize information in order to solve the problem or get answer to the question, they raised. The students are active participants as they develop hypotheses which are later tested by use of data; eventually they may formulate generalizations.

In planning for teaching, teachers should remember that both the expository approach and the inquiry approach each have their its own place; often these approaches overlap. For example, in presenting information to large group, teacher would generally better convey information by using the expository approach with objectives established, materials selected and organised, information presented clearly through lecture and audio-visual techniques. Inquiry approach can be more helpful if the large group is regrouped into small subgroups. Both expository and inquiry approaches are valid for providing conditions in which students can learn. Each should be considered and practised for better learning and higher order information generation.

Organization of student into groups

Organization of students into groups can be based on the following:

1. Which objectives an be reached by the learners on their own?

2. Which objectives can be achieved through interaction among the learners themselves?

3. Which objectives can be achieved through teacher's formal presentation and through interaction between teacher and the student?

Answers to these questions will lead to decisions about the method to be followed, the strategies to be used, the space and time required, and the resources to be selected. Many variations from the normal strength per class begin to occur. The teacher must keep these in mind in order to provide conducive environment to individual students to move toward the objectives; they are provided with materials just as rapidly as they are able to master each segment of the programme.

Allocation of learning space

There should be atleast three types of arrangements in place of only one i.e.classroom.

1. Large group spaces: This arrangement is other than classroom arrangement where other classes or semesters can join for formal presentations in a large group. This can be used for seminar, symposia, discussion, debates, celebrations of national festivals and dates etc.

2. Small group spaces: Arrangements can be made where subgroups of the large group of the class can sit and interact on the topic in order to complete their assignments, projects and dissertations.

3. Independent study spaces: These are needed, especially when audio and visual materials are needed for individual rather than group instruction.

Greater efficiency and effectiveness are possible in the teaching-learning process once teachers begin to group learners in relation to the desired objectives with abovementioned facilities.

Selection of appropriate teaching materials

Teachers as coordinators of learning resources, have a wide variety of materials from which to choose. These materials do not become teaching or learning resources until teachers provide a context for their use. The wide variety of materials can be categorised as follows :

1. Pictures 2. Audio cassettes 3. Motion pictures 4. Television 5. Real things, people, models and simulations 6. Progammed and computer assisted instructions.

Evaluation of performance

Performance is the interaction between teacher and the student, between the student and other students, or between the student and an instructional medium. It is during the performance that the stimuli are presented and responses are made. Performance is the act of teaching, the act of learning. Performance cannot be contained by time although evaluation does occur at many points during performance.

Performance is the focal point of learning. All the effort that has gone into the formulation of objectives, the selection of content, and the assessment of entering behaviours gains significance or becomes non significant as the performance is evaluated. The performance in which teachers should be most interested is that which occurs after the organization of groups the determination of strategy, the allocation of time and space and selection of resources. This performance by the students is the denouement of teaching-learning. It is during the performance that certain aspects of students development occur : motivation, practice, reasoning, transfer, reinforcement and guidance of the learning activity. Glaser points out that there are two primary assessments which are to be considered :

One is to provide information about a student's present behaviour – measurement for this purpose is primarily designed to discriminate between individuals. The second use is to provide information about the instructional techniques which produced that behaviour – measurement for this purpose is designed to discriminate between instructional methods.

Analysis of feedback

This implies a confirmation or correction. The term is useful in teaching since it implies an evaluation of the product (terminal behaviour) in direct relation to the original objectives. If feedback is to be useful, objectives must include the conditions under which the behaviour should occur and a criterion level of acceptable performance, for example on a test to be administered at the end of the application of systems approach unit. No errors will be allowed. The feedback in this case would be the students' perfect application of systems approach to institutional planning or non-application of systems approach in the examination.

It is important for feedback to occur as soon as possible after a response is made. Not only is the feedback valuable to teachers, but teacher's feedback to the student is supportive to the students. If the student's response is correct, teacher should confirm it. Research indicates that such practice facilitates learning. Delay in feedback decreases its effect.

Conclusion

It may be concluded that certainly much learning takes place in the absence of teachers but there are many other things, however, which student will never learn unless someone teaches them carefully and painstakingly. The systematic approach discussed above may help teachers do his job without taking much pain. One of teacher's tasks is to facilitate learning. He is to establish conditions which make it probable that learning will occur within a reasonable period of time.

If a teacher wants to facilitate learning, one of his major tasks is to arrange the environment of students. He may do this by taking them on a field trip, by bringing appropriate learning materials into the classroom and by using technological devices to communicate content to the students. When teachers do these things, teachers are altering the students environment in order to facilitate learning. Whatever teacher may do in a college or university environment his most important function is an instructional one. A teacher performs an important part of that function when he arranges the environment to provide optimum conditions of learning for the students. This can be possible if a teacher can plan out his teaching based on systematic approach.

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To Our Readers

Knowledgeable and perceptive as they are, our contributors must not necessarily be allowed to have the last word. It is for you, the readers, to join issues with them. Our columns are as much open to you as to our contributors. Your communications should, however, be brief and to the point.

University-Industry Linkage

Dr. P. Rama Rao, Secretary, Department of Science & Technology, Govt. of India, delivered the Convocation Address at the thirtyfourth annual convocation of Sri Venkateswara University, Tirupati. Dr. Rama Rao said, "Given the brilliance of the Indian mind and recognizing that experimental innovation is not alien to the Indian genius, noting that we can actually organise ourselves in group endeavours once the goal is defined and the advent of a decentralised and a libralised economy, what remains to be done is establishment of strong linkages between various kinds of institutions, especially the academic and the industrial. Also to cultivate a national will to develop indigenous technologies and use all that is Indian that will result in a significant economic impact". Excerpts

PURSUIT OF EXCELLENCE : Institutions And Individuals

The uppermost thought in my mind is to emphasize, not only for your sake but also mine, the one ideal that we need to pursue, whatever be the task which we take up and the point which we aim to arrive at, is to be utterly professional and to strive to excel. On one occasion, when I was lecturing on the topic of the pursuit of excellence, at the invitation of a management group interested in science, the first question asked of me at the end of the talk was why excellence at all?! My simple and ready answer to the questioner was, Because excellence attracts excellence. Migration of scholars is a phenomenon witnessed in all ages. Athens of ancient Greece was a centre of attraction because of Plato. Learned spaniards gravitated towards Rome. Varanasi in our country became the home of scholars of sanskrit. Cambridge and Oxford in the U.K., MIT and Stanford in the USA, Indian Institute of Science in Bangalore are centres of attraction for brilliant students with an urge to do creative work in an ambience of excellence. If we have to reverse the flow of brain-drain and to attract to our fold not only our natives but the others we have to demonstrate the qualities of undiluted professionalism and transparent excellence in every sphere.

What does excellence imply? When I was working at the Defence Metallurgical Research Laboratory (DMRL), I felt that excellence in the context of that laboratory should mean an ability to create research results leading to development of products, processes or technologies which are competitive internationally. There is therefore an absolute measure by which excellence is judged. The same is applicable in any other context, only the type of results may vary. One unmistakable characteristic of excellence is an unmitigated urge to be creative and comprehensive.

The most important ingredient in any institution, aiming at excellent achievements of superior quality, is the talented professional. No effort should be considered too great in seeking, recruiting and nurturing gifted people and every endeavour should be made to create for them a congenial environment imbued with the stimulating spirit of true creativity. I must also emphasize that a worthwhile and technically challenging mission is essential to provide the major motivation for creativity. Conditions which permit free flow of information, freedom in operation and uninhibited peer interaction constitute the life blood of a successful set-up. These should be encouraged not only within the organisation, but as much as permissible between the organisation's individuals and their fellow-workers within and outside the country. Comprehensive goal achievement in major projects is only possible through sustained involvement and stability of contributions by capable persons. These can be expected from the good men only when they themselves are constantly growing and advancing professionally. A genuine understanding of and generous support to realise their aspirations goes a long way in nurturing and retaining the able workers for the ultimate benefit of the orgnaisation's projects and thus its status and stature.

What I have stated above is from the viewpoint of how institutions are to deal with talented people for the sake of building a culture of excellence. How is the individual himself to act, especially after graduation, a stage at which you now are. It is difficult for me to express to you what I want to say in words any better than those of Professor S. Chandrasekhar, the noted Nobel Laureate, whose advice was sought by his brother Balakrishnan regarding his future course of studies and career. Reproduced below are parts of Professor Chandrasekhar's letter from England, where he had already accomplished what anyone would have gladly regarded as something quite significant (taken from Kameshwar Wali's biography of S. Chandrasekhar, Viking-Penguin 1991). He writes to his brother as follows :

> *"You mean implicitly that my capacities were proved by my earlier career. If you think so — or for that matter, if anybody thinks so — I can say that it is all wrong. Do you think, that just because one read a little calculus and conics when his equals did not, read a little statistical mechanics which others of his*

> *age did not, happened to publish a few papers, Do you think that he is better than his friends, or Do you imagine he has in any case intrinsic merit? You are woefully mistaken if you think so...*
>
> *I wish I could divulge to you the sorrows of my heart, and tell you how I feel at times that my heart will break by the oppression of my ignorance. You are mistaken and so are others, if they think that I have proved anything at all. My progress I only know too well is positively shameful...*
>
> *What is essential, however, is to have the ideal of gaining knowledge and to work steadfastly towards the ideal. One should not care to worry about what happens. One must lay sound foundations, one must have enough enthusiasm, one must have a passion, one must be filled by the joy of study. That is enough."*

This is the hallmark of excellence. Saul Bellow, the celebrated American poet and writer, when he was elected Fellow of the National Academy, wrote back to the Academy to say that he did not understand what the Fellowship meant. What he understood was his own urge to write and that he would go on writing. As you may know he went on to win the Nobel prize. It was only the other day, that a poll of the readers of the Parade magazine in the USA elected the famous astronomer Carl Sagan as the smartest person in the United States. Informed of the results of the poll, the senior Professor at Cornell University responded "*a good definition of intelligence is understanding of how little we understand what there is to*". Professor Chandrasekhar who has been pursuing science, his chosen avocation, with extraordinary and unceasing dedication says "*One's place in science, as posterity will duly assign, depends largely on one's continuous exertion, at the edge of one's ability*".

I earnestly urge you to capture the message that is unequivocally contained in the above statements of some of the great personalities. It is important that we do not fall prey to the temptation of being in the limelight. In the modern world, myriad tools of propaganda can project to millions of gullible people a synthetic picture of gigantic proportions of what is probably, in terms of absolute standards, a minor or a trivial accomplishment. "*The good Homer in his heyday was known only to the seven cities of Hellas*" Vivekananda has remarked that "*it is only the pygmies of the world that want to be famous*". My fovourite author Raghunathan says in his Sotto Voce "*in the old world, a great reputation blazed like a fire that lights any lamp with wick and oil in it. In our dropsied age, it is the sound and fury of the wind among the trees*". Let us therefore note that the path to noble accomplishments is paved with quiet and introspective contemplation, a humble and humane attitude and purposeful and professional endeavour. It is always good to remember: "*Humility does not consist in hiding our talents and virtues, in thinking ourselves worse and more ordinary than we are, but in possessing a clear knowledge of all that is lacking in us and in not exalting ourselves for that which we have, seeing that God has freely given it us and that, with all His gifts, we are still of infinitely little importance*".

THE PROSPEROUS WEST AND INDIA'S STRUGGLING ECONOMY: Where is the contrast?

I wish now to deal with another question which I have been mulling over in my mind, a question of practical significance and one that is frequently raised today. Why science and technology that have enabled Western nations to achieve unprecedented prosperity do not seem to be yielding similar results in India? People come up with various theories and one of them is that Western science and philosophy, unlike Indian philosophy, is based on experiment and replicability of experiments. The implication is that, as a community, we are not genetically equipped to practice experimental science. How false is this premise would be clear to us when we look at the achievements of ancient India of which the commonly held notion is one of a civilization, perhaps unmatched in classical thought but bereft of achievements in technology or experimental science. While everyone probably knows about the spectacular achievements in medicine and surgery, chemistry and agriculture, I wish to mention here instances pertaining to matertials technology. India was ahead of Western world and the rest of the world in the area of zinc production on a massive scale. While zinc was a scientific curiosity in Europe as late as 300 years ago, zinc had been produced in India on an industrial scale atleast 2000 years ago. Iron technology, again going back to the use of the metal around 1000 BC, culminated in major achievements during the Gupta period. An astounding product is the Delhi Iron Pillar standing there, rust-free on its exposed surface, for more than 1600 years. Bronze castings to which there is a reference in Sankara's discourses are exquisite illustrations of technology stimulated by cultural traditions. It is a recorded fact that more than three centuries ago, during 1660-1670, India exported to Western Europe nearly 6.5 tonnes of 'Wootz Steel' in small lumps of unspecified size made by the native crucible process in the 'Deccan'. The famous Damascus swords were made from this Indian steel, deemed then a high technology and advanced material. Professor Debiprasad Chattopadhyay in his monumental documentation on

"History of Science and Technology in Ancient India" (published by Firma KLM, Vol.I 1986, Vol.II 1991) has taken enormous pains to establish unequivocally the Indian skill in experimental sciences. To cite one instance from contemporary times, the universally known Raman discovery was an experimental accomplishment of extraordinary simplicity signifying a major advance in understanding the physics of substances. There is, therefore, no question about our ability to carry out imaginative experimentation or development of innovative technology. We cannot then accept that the Indian genius is not suited to experiments.

Yet another premise to explain the disparity in the prosperity of the West and India is contained in the statement that has been made in regard to science becoming an organised and group endeavour and the Indian psyche not having quite adjusted to this requirement. This view is not just one of the Western authors but is also held by a large number of our own countrymen. I have no hesitation to state that this too is a false belief. We only have to look at how the Indian Space Research Organisation (ISRO) has been engaged in group activity, not just confined to personnel belonging only to ISRO but extending to several of those outside. The Integrated Missile Development Programme of the Defence Research & Development Organisation (DRDO) is yet another spectacular example of massive involvement of several people drawn from not just the Defence Research & Development Laboratory (DRDL), not just the other laboratories of DRDO, but also various other laboratories of CSIR, academic institutions as well as industry in the public and private sectors. There is no need to say anything more to disprove that we Indians cannot work as a group. Invariably, when the goal has been defined, Indians have no problem in getting themselves involved in a coherent fashion in a sustained team effort directed to achieve of the avowed goal.

Wherein then lies the difference between Western science and technology and Indian science and technology? My purpose essentially is to emphatically mention here that the answer to the question that we raised above does not lie in the two notions which are indeed commonly but erroneously held. A discussion to find the answer would be an involved one and I may not be able to put it all together. However, one thing seems clear to me that a major difference in S&T of, let us say, USA or Japan and S&T of India is to be found in regard to the industry's promotion of and involvement in research and development. The private industry in our country accounts for a meagre 10% of the total research and development expenditure in our country. Much of it therefore comes from the Government. No institution in our country has promoted research and development more vigorously than our Government ever since independence. No one perhaps has stated the value of science and technology more forcefully than what has been said in the Scientific Policy Resolution by the Government of India: "*The key to national prosperity, apart from the spirit of the people, lies, in the modern age, in the effective combination of three factors—technology, raw materials and capital—of which the first is perhaps the most important, since the creation and adoption of new scientific techniques can, in fact, make up for a deficiency in natural resources, and reduce the demands on capital. But technology can only grow out of the study of science and its applications*". In pursuance of this policy, there has been no let up in the government support to science and technology. However, there is only so much that a Government can do and can continue to do. There is no gainsaying that the Government's unswerving interest and sustained financial allocation has to be supplemented by the industry. The industry's contribution to research and development in USA or Japan, economically prosperous nations, is phenomenal. I think the point is made even without mentioning the comparative figures in absolute terms or in terms of percentages pertaining to the situation in those countries and India. Nehru, in one of his addresses to the Science Congress, makes an extraordinary point namely, that "*the institutional and social framework has to undergo some changes before science can have full play*". In another address, Nehru comes back to this point in an even more ferocious manner. I quote, "*In India we were dominated by a lawyer's mentality and more lately by a classical philosopher's, latest in the picture was the businessman's mentality. But neither the lawyer nor the classical philosopher can solve our problems. Present problems of India are to be tackled not with the approach of a lawyer or a classical philosopher but with a partly scientific and partly engineering approach. I doubt very much if a businessman with his limited outlook can play any part at all!*".

While I am addressing this in a way to the industry, I wish also to dispel the idea that is sometimes held by the purist in sciences that industrial R&D is not of the same kind as academic research, that it borders on the mundane and the banal, unlike his scientific research which is so exciting and absorbing. There are any number of instances of excellent science emanating from industrial research. I would only name two examples: one of Irwing Langmuir deliberately choosing to work in the laboratories of the General Electric Company contributing to such developments of commercial success as the incandescent lamps and eventually winning the Nobel Prize for his work in surface chemistry. More recently, the scientists at IBM, a giant commercial corporation, won Nobel Prizes for their design of the Scanning Tunnelling Electron Microscope and their discovery of superconducting ceramic oxides. It is vital for us, therefore, not to compartmentalise ourselves as academic researchers and industrial researchers as long as we are clear as to what we have to do namely, creative research of exceptional quality.

UNIVERSITY-INDUSTRY LINKAGE: An urgent need

This brings me to my final thought, viz., one that concerns the University-Industry linkage. In a country of limited resources, we must utilize every opportunity that we have to get our act together in a coordinated fashion. Strengths that have been developed in various sectors have to be deployed for activities that transcent sectorial boundaries. Industry's needs for scientific and other inputs arise from their requirements of information, literature, diversification, product upgradation, new investments, quality standards, higher yields, conversions, safety and energy audits, liaison with the government laboratories and so on. It would be enormously beneficial if academic personnel train and familiarize themselves with the industry's ethos, their kind of work in terms of project formulation and time-and cost-targetted approach. I really do not want to tire you with all the detailed possibilities that exist for the academic and industrial units to be involved with each other. Often there are accusations of academic research languishing as a cloistered activity and not even being accountable for results. We must note that there is always a spectrum of capabilities and inclinations in any institution. There will be some who have talents and capability for what we regard as basic research. There is no need to interfere with this element at all. On the other hand, we will always support basic research in the best of traditions that have all along been nurtured in our country. I am sure that there will always be another set of people with gifts that are best suited to interaction with the industry and practice of applied research. We have to encourage and provide opportunities for this group to interact with the industry. At DMRL, Hyderabad, we established a centre called "Non-ferrous Materials Technology Development Centre" with a group of laboratory personnel admixed with a fex deputationists from public sector industry in a joint effort for development of products of interest to the industry with additional financial investments coming from the industry. I believe this is a story of some success demonstrating what can be accomplished when laboratory and industrial researchers work together. There is a component of academic input here as well, in a way central to the quality of the joint technical endeavour. So, possibilities exist and are immense for academic university-interaction. Anything that can be done in Sri Venkateswara University, and the universities where you young graduates, may find yourselves now or later, to promote this interaction even more vigourously than what may have already been done is bound to be a contribution towards realising the full potential of the national effort in raising productivity and the level of domestic economy. A good index of success in this respect is the ability of the University to stimulate industry to invest funds in this interactive process. It is also believed that Western science and technology, and now science and technology in the Far East – Japan and South Korea, blossomed because of decentralised economy. The Government of India have now announced the new industrial policy that promotes decentralisation in a way as never before.

Given the brilliance of the Indian mind and recognizing that experimental innovation is not alien to the Indian genius, noting that we can actually organise ourselves in group endeavours once the goal is defined and the advent of a decentralised and a liberalised economy, what remains to be done is establishment of strong linkages between various kinds of institutions, especially the academic and the industrial. Also to cultivate a national will to develop indigenous technologies and use all that is Indian that will result in a significant economic impact.

The Vedic prescription is to accept knowledge from wherever it comes. Extension of this concept is to work with anyone that we can find from anywhere as long as we are moving towards enhancing our national well-being and prosperity.

Let me close with the words of Fe'nelon :

> *"As the light grows, we see ourselves to be worse than we thought.... But we must be neither amazed nor disturbed. We are not worse than we were; on the contrary we are better. But while our faults deminish, the light we see them by waxes brighter, and we are filled with horror.... While we go with the stream, we are unconscious of its rapid course; but when we begin to stem it ever so little, it makes itself felt."*

CAMPUS NEWS

An Island of Sanity

Prof S. K. Agrawala, Secretary, Association of Indian Universities (AIU), was the chief guest at the Annual Commencement Function of the Spicer Memorial College, Pune. Speaking on the occassion, Prof. Agrawala noted that the Spicer Memorial College laid emphasis on certain important perspectives, like job-oriented education, autonomous institutions, equity and excellence, teacher training and the like. Since its very inception its pioneering character is not only being recognized but is now being emulated and cited as a model.

Stressing that the College relied on 'self help', above everything else, Prof. Agrawala said, "It is an attitude of mind as well as an acquired habit, which youth in all developing, democratic and egalitarian societies must imbibe as a mark of their total identification with and commitment to the basic values of such societies, which your founding fathers have established". Self-help, he added, must, however, come from within, it should not be imposed from without. It should be willingly and voluntarily undertaken, not suffered grudgingly or tolerated as a necessary evil. Self-help does not abjure cooperation or team-work, rather the two go hand in hand. Living and working on the ideal of 'self-help' is not being individualistic, but being non-exploitative, self-reliant, self-respecting as well as giving equal respect to the labour and contribution of others".

Speaking of the 6 million educated unemployed with graduate and postgraduate qualifications, Prof. Agrawala lamented that the "educational system has lost all credibility since it was not based on any sound manpower planning. An appropriate educational planning should ensure that approximately as many students get the type of training and education as can be absorbed in the related jobs or can develop self-employment; the content of courses in the universities and colleges is related to the requirements of the job market, and that one does not enter the higher educational system simply because one has nothing better to do". The 10+2+3 pattern of education was introduced on the basic premise that after +2 most of our students would go in the vocational stream and only a limited few motivated and highly talented students would enter the university system for higher studies and research.

Vocationalisation of education has failed because it was not realised that it implies the quality and quantum of training which could adequately prepare the students for handling professional jobs in a demanding industrial market; nor does it appear to have been assessed as to how many of our colleges had the requisite trained manpower and the necessary infra-structure in terms of laboratories, workshops and equipment etc. The experiment of vocationalisation of education cannot succeed unless we have polytechnic level institutions in requisite numbers spread all over the country, replacing our traditional colleges. It is also erroneous to start with the assumption that the country or the economy needs only top level engineers, doctors and technicians. In any circumstance, only a few at that level can be absorbed by the economy. A much larger number is needed at the second, third, and fourth levels. The base of technical, job-oriented education has, therefore, to be broadened several times, creating opportunities for larger and larger numbers at different levels.

Prof. Agrawala complimented the founders of the Spicer Memorial College who envisioned the need for intensive and appropriate vocational education at the lower levels in diverse fields, which could produce candidates well-trained for the job-market and/or capable enough to generate self-employment. He commended this model of vocational education to the policy farmers and all other educationists.

Speaking about the autonomous character of the College Prof. Agrawala said autonomy of colleges and university departments to enable them to innovate in the formulation of courses, teaching methods and examinations, independent of the university, is one of the policy objectives which the University Grants Commission is assiduously emphasising over the last more than a decade. Only about 100 and odd colleges have achieved autonomous status thus far against a targeted figure of 500 by the end of the Seventh Plan. A college ought to be known in the job market as well as amongst the academia by what it has been able to achieve, and should not be able to hide behind the anonymity of a University. "You can rejoice in the fact that the reputation which your college has earned in the country and abroad is genuinely yours, and is not the reflected glory of any bigger institution".

The indifference, apathy and lack of motivation which prevails amongst the teachers and students generally throughout the country, has made the higher educational system in the country completely dysfunctional. A few institutions which are dedicated to a cause—whether religiously motivated or inspired by high secular ideals, and are administered by people imbued with those ideals, are doing better in all directions than the rest. Their products are better trained, their alumni are much better disciplined and motivated and their staff is fully accountable. "Lucky are those who are on small islands of sanity amidst a vast ocean of mediocrity, hypocrisy and callous indifference o one's basic obligations", observed Prof. Agrawala.

While concluding he said, "Excellence and good performance are, however, relative expressions. There is always room for improvement. For maintenance of standards and their improvement, it is necessary to introduce a system of monitoring, assessment and evaluation in the institution. Various parameters and performance indicators have been suggested and attempted in some institutions in India and in several abroad. The Spicer Memorial College would be taking a lead indeed if it could formulate and apply indicators which are scientific, quantifiable, publicly verifiable and easily comprehensible."

Teacher Development Programme

The Academic Staff College of Himchal Pradesh University recently organised its Eleventh Orientation Programme. The programme was inaugurated by Prof K.C. Malhotra, Vice-Chancellor, Himchal Pradesh University. While stressing the need for training of college and university lecturers at the entry stage, Prof. Malhotra said that the education system had already committed a blunder in imposing only academic qualifications as pre- requisites for an effective teaching at tertiary level of education. He felt that the teaching profession was not an ordinary one but a noble and nucleus of all socio-economic vibrations in the society. 'It is a profession of giving and giving only and not expecting anything in return, he said.

The programme attempted to improve participants' understanding of their role particularly in the changing socio-economic milieu, inculcate appropriate teaching skills, stimulate creative and problem solving skills and enhance their sensitisation toward various segments of the education system and society. The whole programe was responsive to the needs of participants. The programme team consisting of Dr C. L. Gupta, Coordinator and Dr. Yoginder Verma, Director, Academic Staff College, assessed the needs of participants through various techniques such as breaking the ice, warming up, group discussion, fish bowl, buzz session etc. The selection of contents was made in accordance with the need of the participants and the guidelines of UGC which were covered through systematic planning. The sessions were arranged in such a manner that active participation of each and every teacher by way of stimulating presentations, debates, quiz, teaching game, role playing, discussions, preparation of reports etc. was ensured .

Certain sessions were devoted for self-introspection and management. Each participant analysed his/her teaching style from the already videoised teaching sessions. The participants also attended certain introductory sessions in computer applications. Every participant was given certain assignment. They shared the responsibility of writing daily reports and chairing the sessions. Multiple evaluation strategy was the main feature of this programme.

At the valedictory function Prof. K. C. Malhotra, Vice-Chancellor, urged the teachers to translate the knowledge and skills learnt during the programme for making education relevant in catering to the needs of the society. The teacher, he said, had the greatest challenge to pursue their ideals in the society which was full of evils and exhorted them to resolve to plan desired changes through their own personal examples.

29 teachers belonging to different colleges of Himachal Pradesh and Punjab participated in the 4-week programme.

Certificate in Guidance

The Indira Gandhi National Open University (IGNOU), in collaboration with the National Council of Educational Research and Training (NCERT) proposes to launch a Certificate Programme in Guidance (CIG) to cater to the needs of teachers, parents, social workers and others interested in the guiding of primary school children for their better learning and socio-emotional development. The significance of this programme lies in its facilitating retention of children in primary schools through effective guidance activities.

The Certificate in Guidance has been specially designed to help the learners develop understanding of child development and evolve strategies to facilitate all-round development of children. Being a programme of six months, CIG consists of four courses, namely, understanding the Elementary School Child, Facilitating growth and Development, Guiding Childrens' Learning and Guiding Socio-Emotional Development of Children. The medium of instruction of the programme initially is English and will be extended to Hindi in subsequent years. This programme, to become operational in January 1993, is offered at 57 Study Centres covering Arunachal Pradesh, Assam, Delhi, Gujarat, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Rajasthan, Sikkim and Tripura. Those interested to join the programme may collect the Application Form from the Regional Centres and Study Centres of IGNOU in these States on payment of Rs.20. The last date for submission of Application Form is 31.07.92.

Orientation Programme

"Most of the teachers today are mere communicators of information. Only a few of them are in the tradition of our ancient Gurus. The traditional Guru not only communicated information but through his vast learning, assimilation and contemplation, acted as a reservoir of knowledge. That communication satiated the thirst for learning and wisdom of his disciples", said Prof. A. D. Bohra, former UNIDA expert, social worker and eminent educationist, while inaugurating the XXI orientation programme of the Academic Staff College of Jodapur University. He reiterated that Orientation Programmes were a must in a rapidly changing environment of the explosion of human knowledge which had converted today's world into a techno-info society. He said alongwith other types of pollution – physical,natural and moral – there was pollution in our thinking also. And that was the worst pollution. Good education alone could check this pollution. Our education therefore had to be humanised and we ought to know, we must communicate, and we must be conscious of our environment. When rights were recognised without duties, it led to mental pollution: "A teacher therefore has to interest himself himself in, and visualise various models of future development in every field and then modify his thinking and polish his teaching. The orientation programmes such as these would show him the way to do this", Prof. Bohra concluded.

The course content consisted of day-to-day discussions, daily reporting, term paper or book review writing or group participation. A panel discussion was held on Problems of Higher Education with the core theme : 'Improving the social image of our Educational Institutions'. It was recommended that teachers should be actively associated in decision making; in education field, educationists of proven capability and not bureaucrats should be appointed on key positions ; teachers should endeavour to make educational institutions free from political interference; care be taken that only qualified and committed persons are selected for teaching; moral education be made compulsory part of all syllabi; education should emphasize not the quantitative growth but the qualitative development also; education be made job-oriented and linked more closely with industry.

The teaching methodologies adopted during the course of the programme included Micro-lab, Lecture-cum-discussions, Group discussion, Panel discussion, Brain storming, Behavioural Games, In-basket exercises, Experiential learning. Case study, Interactive video method, Book review, Reflect sessions, Workshop, Microteaching and Problem solving were deployed for orientation.

Dr. M.R.Gelra, Vice-Chancellor of Jain Vishvabharati, Ladnun (a deemed University), in his valedictory address, asked the teachers to develop scientific temper as well as a code of conduct for reviving the pristine glory of the profession. These are necessary prerequisites for the discovery of truth and orientation of personality, he opined and added that knowledge, without scientific temper and ethical code, can never do good to society or to self.

Professor Emeritus, Dr. M.L.Mathur, former Vice-Chancellor of the Jai Narain Vyas University, Jodhpur, who presided, emphasized the need of orientation for newly recruited lecturers. The orientation, he said, should be done immediately after their selection as it helped in equipping them with job- related skills and society-desired attitudes. Since orientation scheme had been found useful, there was every hope that it would become the part of the system and once the backlog was cleared and Academic Staff Colleges were firmly established it might be made necessary at the entry point of the profession, Dr. Mathur added.

Towards Global Peace and Development

To commemorate the Silver Jubilee Year of South Gujarat University, the Department of Continuing Education and Extension Work, in collaboration with International Association of Educators for World Peace(IAEWP) proposes to organise a National Convention on Marching Towards Global Peace and Development on July 24-26, 1992. This National Convention is preparatory to the

Sixth World Congress of IAEWP to be held at Malta in November '92.

The topics proposed to be discussed include (1) Peace Education through Non-formal System; (2) Visualising a Non-violent society in the 21st Century through Environment Protection and Vegetarianism; (3) Peace through Environment Education; (4) Role of Youth & Women in Peace Education; (5) Peace Education for International Understanding; and (6) Continuing Education for Communal Harmony, Social Justice & Industrial Peace.

Further information may be had from Prof. Nanubhai Joshi, Department of Continuing Education & Extension Work, South Gujarat University, Surat-395007.

INSA Awards 1992

The Indian National Science Academy (INSA) have seclected seventeen young scientists including five women for the Awards for 1992.

The Academy also announced the Anil Kumar Bose Memorial Award for 1992 to Dr. Dipankar Datta, Department of Inorganic Chemistry, Indian Association for the Cultivation of Science, Calcutta. The other recipients are: Dr. Partha Basu, Indian Association for Cultivation of Science, Calcutta, Dr. Jaivardhan Ramanlal Bhatt of the Ministry of Environment and Forests, New Delhi, Dr. Vilas Gajanan Gailkar, University of Bombay, Dr. Sunil Kumar Ghosh, Bhabha Atomic Research Centre, Dr. Vibha Gupta, Tata Energy Research Institute, New Delhi and Ms. Archana Hayaran, All-India Institute of Medical Sciences, New Delhi.

Dr. Anil Kumar, International Centre for Genetic Engineering and Biotechnology, New Delhi, Dr. Nibir Mandal, Allahabad University, Dr. Indranil Manna, Indian Institute of Technology, Kharagpur, Dr. Anuradha Mehta, Jawaharlal Nehru University, New Delhi, Dr. Jayanta Mukhopadhyay, Indian Institute of Technology, Kharagpur, and Dr. Nishigandha Ramachandra Naik, Cancer Research Institute, Bombay.

Mr. Siyaram Pandey, Centre for Cellular and Molecular Biology, Hyderabad, Dr. T.P. Radhakrishnan, University of Hyderabad, Ms. Hema Sankaran Ramachandran, Bhabha Atomic Research Centre, Dr. D.S. Ramesh, National Geophysical Research Institute, Hyderabad and Dr. (Mrs.) Renu Tripathi, Central Drug Research Institute, Lucknow.

HP Varsity Convocation

Dr. Shankar Dayal Sharma, Vice-President of India, emphasised that it was obligatory to link education with the local needs besides making it practical so that it could contribute in the development and progress of our country. He was addressing the eleventh convocation function of the Himachal Pradesh University in Shimla recently. Dr. Sharma said the university was the centre of higher education which produced the specialists in different sujects. He felt that education should be linked with industry, agriculture and other fields which would help in protecting the interests of our society.

Dr. sharma said universities must undertake the socio-economic survey of their regions which could identify what types of trained and educated youths were required to achieve this goal. He said higher education should be modelled in such a way that it could be utilised for economic development of that region.

Dr. Sharma said in this way universities would be able to fulfil the requirements of their regions. He said quoting late Dr. Yashwant Singh Parmar, founder of Himachal "we should read economics and sociology but if we want to economically and socially uplift people of the hills then our youngmen must be imparted the training in science and technology". HP hills are endowed with the vast hydel potential and climate is suitable for growing fruits which can bring economic revolution in the hills. To achieve this goal, we require power engineers, civil engineers, agricultural scientists, besides the experts in forestery and horticulture, Dr. Sharma siad. Due to lack of practical approach, youth were delinked from their areas and proceeded in wrong direction which ultimately resulted in keeping backward areas as continuously backward, ha added.

The Vice-President said basic philosophy of education should be attributed to the chararcter building, devoting ourselves to the welfare of of society and commitment to do 'karmas' in the life.

News from Agricultural Universities

Two New Projects to TNAU

Rockefeller Foundation of USA has sanctioned a new scheme to Tamil Nadu Agricultural University, entitled "Search for Rice Sheath blight disease resistance" for a period of three years based on the significant contributions made by the University in the field of crop protection. This was disclosed by Dr. S. Jayaraj, Vice-Chancellor of the university recently.

The Vice-Chancellor, stressing the utility of this new scheme said that almost all the high-yielding rice cultivars are susceptible to sheath blight disease. No resistant gene has so far been identified against the disease. Since the pathogen survives in soil for several years and can attack hundreds of the plant species, it is very difficult to eradicate the pathogen. Toxins produced by the pathogen can be used as tools to select calluses using tissue culture technology from which resistant plants are regenerated. Since most of the toxins are considered as virulence factors, the toxin-resistant plants will show less disease. Thus the project aims to manage the disease by tissue culture and genetic engineering through collaboration with laboratories in which cloning of the chitinase gene is currently underway.

The main objectives of the scheme are to exploit somoclonal variation to detect sheath blight resistant rice plants, isolation and characterization of toxins from the sheath blight pathogen, selection of calluses resistant to the toxins and field testing of selected somoclones, and in collaboration with an appropriate laboratory in the Foundation's network, investigate the feasibility of utilising *Trichoderma viride* as a chitinase gene source to create transgenic *Pseudomonas fluorescens* for sheath blight control in the rice rhizosphere.

Another new scheme entitled "Biocontrol of soil borne diseases of national importance using fluorescent pseudomonads" has been sanctioned by the Government of India, Ministry of Science and Technology, Department of Biotechnology, New Delhi, at a cost of Rs.22.34 lakhs for a period of five years.

"Rice sheath blight, chickpea wilt, pigeonpea wilt and banana wilt are causing heavy losses and they are difficult to be controlled", Dr. S. Jayaraj outlined and said that biological control of these diseases was the only possibility. This new project will evole a viable technology to manage these diseases and will increase the yield of rice, pulses and fruits, which is of national importance.

The Principal Investigator of both the schemes is Dr. P. Vidhyasekaran, Director, Centre for Plant Protection Studies of the University.

Konkan Krishi Vidyapeeth Convocation

"There is a dire necessity of linking the laboratories of the farm universities with the fields of the farmers", said Mr Sudhakarraoji Naik, Chief Minister of Maharashtra while delivering the convocation address at the Konkan Krishi Vidyapeeth, Dapoli.

In his address, Mr Naik appealed to the young graduates to participate in the task of rural reconstruction. He appreciated the contribution of Konkan Krishi Vidyapeeth in the field of agricultural education, research and extension education. After reviewing the overall scenario of agricultural production in the Maharashtra State, he emphasized the need for increasing the productivity of all the crops so as to make the State self-sufficient. He expressed serious concern over the dependence of the Maharashtra State on the other States for pulses and oilseeds. For increasing the production of foodgrains, oilseeds, pulses and fruits, he emphasised the need for establishing close coordination between the farmers and farm scientists. He explained the importance of the subsidiary occupations like dairy farming and fish farming and stated that these occupations had great potential in development of the Konkan region. Mr Naik also expressed his views over issues like watershed development, dryland farming, ecological balance and increasing population.

Dr S. B. Kadrekar Vice-Chancellor, in his report, listed the achievements of the University in the fields of education, research and extension education. He made a special mention of the students' participation in the literacy mission launched in the country. While highlighting the research contributions of the University, Dr Kadrekar particularly referred to 'Sindhu' a variety of mango which is almost stoneless, 'Vengurla-6', a variety of cashew having bold kernel, 'Konkan Shweta' a variety of snake gourd and 'Konkan Ruchira' a variety of drum stick.

Dr Kadrekar also reviewed the extension education activities carried out by the university for the benefit of the extension workers and the farmers. He stated that for the first time, seed production programme, on an area of 650 ha. on farmers' fields was implemented to produce the HYV seed of rice through 'seed village ' concept.

Mr Rohidasji Patil, State Agriculture Minister and Pro-Chancellor, who presided, awarded degrees to 70 B.Sc.(Agri.) 20 B.Sc. & A.H., 20 B.F.Sc. students, 47 M.Sc.(Agri.), 20 M.V.Sc., and one M.Sc. (Fisheries) students. Gold medals for outstanding performance at the University examinations of 1990-91 were also awarded on this occasion.

New Tree Seed Technology Scheme

Realising the importance of trees

as an integral part of agro-ecosystem, the United States Department of Agriculture (USDA) and Indian Council of Agricultural Research (ICAR) have sanctioned a new scheme for Tamil Nadu Agricultural University (TNAU) with the project cost of about Rs.20 lakhs. According to Dr. S. Jayaraj, Vice-Chancellor TNAU, this new scheme entitled "Seed Production, Processing and Storage Technology for Tree Seeds" has been sanctioned for five years and will be operated in the Department of Seed Technology of the University. The main objective of the scheme is to study the tree seeds such as neem, ailanthus, and casuarina with particular reference to flowering, seed maturation, germination and vigour potential and fixing seed zones as a uniform ecological unit. In addition, the influence of seed zones and pollutants affecting seed production, maturity, processing, vigour and viability will also be studied.

Detailing the programme of the new scheme, the Vice-Chancellor outlined that the detailed survey to fix up seed zone, seed development and maturation, seed grading for quality assessment and seed dormancy will be taken up. It is also contemplated to undertake research on standardisation of suitable seed and seedling management practices and standardising to wean away the use of hazardous pollutants, development of methods of securing high germination and field emergence besides prolonging shelf life of seeds. Storage evaluation, identification of chemical and biological active chemical treatments in promoting seed germination and causes for promotion or deterioration of seed quality assessment will also be carried out in this scheme. It is envisaged that the proposed research would yield valuable results on seed technology and nursery technology of the four tree species which would lead to greater biomass production.

TANU Develops New Machines

The Agricultural Engineering scientists of Tamil Nadu Agricultural University have developed the briquetting machine for coirpith, for making fuel briquett from coirpith.

This continuous horizontal type briquetting machine consists mainly of an overhanging screw shaft, a barrel housing and an extruder die-pipe (65cm dia). The screw shaft is coupled directly to a reduction gear unit (10:1) and is driven by a 5 HP electric motor. The coirpith has to be mixed with cowdung as a binding material in the ratio of 6:1 to form as a dough material. The length of hollow briquettes produced vary from 5 cm to 10 cm. The capacity of the new machine is 125kg/hr. The caloritic value of the briquettes is 3000 kcals/kg.

The scientists have also developed "Tapioca Peeler", to remove the outer skin (rind) of the topioca tubers. This machine consists of a cylindrical rotor made of G.1 material having 25 cm diameter and 30 cm length fitted with 30 number of cutting blades (stainless steel) which are parallel to the axis of the rotor. The blade angle is 50^0 and the speed of the rotor is 1100rpm. A feed chute with provision for conveying the feed has been fixed on the top surface of the rotor. Necessary inlet for the tuber to be peeled and outlets for skin and peeled tubers are provided in the machine. The machine is powered by 1HP motor. The capacity is 950kg/hr. The peeling efficiency is 83%.

The chilly seed extractor has also been fabricated at TNAU. This can be used to extract the seed for the dried chilly. The dried chilly fruits are mecrated into small pieces without cell rupture and thereby the seeds are separated from the fruit. This seed extractor is of a continuous type which can be easily operated by the ordinary village folk. The fibre extractor developed will be useful for separating the skin containing fibre from round stemmed fibrous crops.

News from UGC

Countrywide Classroom Programme

Between 10th June to 17th June, 1992 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 1.00 p.m. to 2.00 p.m. and 4.00 p.m. to 5.00 p.m. The programme is available on the TV Network throughout the country.

Ist Tranmission

1.00 p.m. to 2.00 p.m.

10.06.92

"The Story of Cement"
"Urbanisation-II:Urbanisation in Asian Countries"
"Cockroaches"

11.06.92

"Communicating Communication-III: Indian Media Scenario"

"Mapping the Ocean Floor"

"The Golden Gate: A Reassessment"

12.06.92

No Telecast

13.06.92

"Ukrainian Applied Art"

"Science of Musical Instruments-V: Jhankar"

"The Week Ahead"

14.06.92

No Telecast

15.06.92

"Inflation in the Universe"

"Pressures on Pre-School Children in India"

16-06.92

"Protection of food stocks in Tropical Region"

"Echo Cardiography-II"

17.06.92

"Ferrocement Technology: An Available Option"

"Urbanisation-III: Urbanisation in Developed Countries—USA"

"Mycoloxins"

IInd Transmission

4.00 p.m. to 5.00 p.m.

10.06.92

"Artificial Insemination"

"Archaeometry"

"Consolidation of Arable Land"

11.06.92

"Electronics-V: Amplifier"

"Spectrometry in Geological Remote Sensing"

"The making of a Poem"

12.06.92

No Telecast

13.06.92

"Folk Theatre-Yakshagana"

"Innovation: Picture Perfect"

"The Week Ahead"

14.06.92

No Telecast

15.06.92

"A Voyage into Matter"

"Social Market Economy—A German Experience"

"Saffron Saga"

16.06.92

"Flocculation"

"Contract Act-I"

"Philosophy of Homoeopathy-I"

17.06.92

"Biotechnology: The Future"

"Tropical Cyclones-I"

"The Past Story-I"

News from Abroad

Student Wellbeing and Development

The Second International Seminar on Student Wellbeing and Development will be held at the International Conference & Study Centre(ICSC) of the University of Twente, Enschede, Netherlands, on 30th October - 2 November, 1992. The theme of the seminar is "Strategies for Student Success". The seminar is co-sponsored by the Vrije Universiteit Brussel, Belgium, and The National Wellness Institute Inc., USA.

The topics proposed to be discussed at the seminar include : Attracting Students to Higher Education (Institution, Course, Career); Bridging he Gap between School and Higher Education; Developing Transferable Skills and Student Independence (The 'Enterprising Student'); Assisting Emotional & Personal Development; Work Experience and Student Development; Student Development and Retention; Accommodation, Life Quality and Medical Welfare Issues; Financial Management by Students; Student Leadership Development; Students and Quality Assurance; Dealing with Special Groups; Students as Customers; Research in Student Wellbeing and Development; and Student Wellbeing and Staff Development.

Keynote Speakers include : (i) Eric De Leeuw, Councillor to the Rector, Vrije Universiteit Brussel, Belgium; (ii) George Gordon, Director, Centre for Academic Practice, University of Strathclyde, Scotland; (iii) Fred Leafgren, Asst. Chancellor - Student Life, Univ. of Wisconsin, Stevens Point, USA and Co-Founder, The National Wellness Institute; (iv) Doreen J. de Winter Hebron, Director & Senior Business Consultant, H + E Associates Ltd., UK; (v) Franz-Hermann Riebel, Founding Head, Centre for Professional Development, University of Kassel, Germany.

For further information contact may be established with Student Wellbeing Seminar, H + E Associates Ltd, 12a Church Street, Stiffkey, Nr. Wells-next-the-Sea, Norfolk NR23 1QJ, England.

ANNAMALAI UNIVERSITY

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   Eligibility : Bachelor of Library Science/Bachelor of Library and Information Science or equivalent qualifications.

The cost of application form and prospectus for each course is Rs. 25. Applications will be sent to all by registered post.

APPLICATION FORM AND PROSPECTUS CAN BE HAD FROM THE DIRECTOR, DIRECTORATE OF DISTANCE EDUCATION, ANNAMALAI UNIVERSITY, ANNAMALAINAGAR-608 002 by sending a requisition alongwith a crossed Demand Draft for Rs. 25 drawn in favour of the **REGISTRAR, ANNAMALAI UNIVERSITY,** on any bank at **ANNAMALAINAGAR/CHIDAMBARAM,** mentioning clearly the name of the course for which the application form is required and a self-addressed unstamped cover of size 25 cm x 12 cm. Cheques, Postal Orders, Money Orders and Out Station Demand Drafts are **not accepted.** Demand Draft should be purchased on or after **25-05-1992.**

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Applications can be had from the following Study Centres also on payment of Rs. 25 by Demand Draft drawn in favour of the REGISTRAR, ANNAMALAI UNIVERSITY, as instructed above.

1. MADRAS : 19, Marshals Road, Egmore,
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   Tiruchi -620 018.
3. SALEM : 15, Dr. Subbarayan Street, Salem - 636 001
   (Near Palace Theatre)
4. NAGERCOIL : 70, Ammasi Madam Street (Near T.T.C. Bus-stand) Meenakshipuram, Negercoil - 629 001
   (Phone No. 3561)
5. VELLORE : 4, Thiagarajapuram, Vellore - 632 001
   (Phone No. 27647)
6. MADURAI : 176, North Veli Street, Madurai - 625 001.
7. COIMBATORE : 72, Sarojini Street, Ram Nagar,
   Coimbatore -641 009.
8. NEW DELHI : 47, (SFS) Basant Enclave, New Delhi - 110 057
   (Phone No. 6875567)
9. ANNAMALAINAGAR: DDE Building, Annamalai University,
   Annamalainagar - 608 002.

All the study centres except Annamalainagar will remain closed on all Tuesdays, Second Mondays and all other public holidays.

SPOT ADMISSION :

Spot selection for admission to the above courses will be made through all our Study Centres from 01-06-1992 if the applicants submit, along with their applications the necessary original certificates, Demand Draft for prescribed fee and two copies of their stamp size photographs. The spot selection is provisional and subject to confirmation by the Director.

Those who want to get applications by post should apply to the Directorate only and not to the study centres.

Filled-in applications should be sent only to the **Director, Directorate of Distance Education, Annamalai University, Annamalainagar, Tamil Nadu, Pin Code 608 002.** IN NO CASE FILLED-IN APPLICATIONS SHOULD BE SENT TO THE STUDY CENTRES.

Applications and Prospectus can be had from the Directorate of Distance Education, Annamalai University, Annamalainagar, and the Study Centres from **01-06-1992.**

REIMBURSEMENT OF NON-REFUNDABLE FEE FOR SC/ST STUDENTS :

As per the G.O. MS. No. 2040 dt. 20.10.1989 of Government of Tamil Nadu, the reimbursement of non-refundable fee for SC/ST students pursuing Correspondence Courses is permissible.

CAUTION

SOME PRIVATE INSTITUTES/INDIVIDUALS POSING AS OUR AGENTS ARE ALLEGEDLY COLLECTING FEES, ISSUING APPLICATION FORMS AND PROMISING ADMISSION TO OUR COURSES. THE DIRECTORATE HAS NO SUCH AGENTS AND TAKES NO RESPONSIBILITY FOR THEIR ACTIONS. CANDIDATES ARE THEREFORE ADVISED TO CORRESPOND DIRECTLY WITH THE **DIRECTORATE ONLY.**

CANDIDATES ARE WARNED NOT TO BECOME VICTIMS OF CHEATING AND EXPLOITATION BY BOGUS CLAIMANTS IN THIS REGARD.

THE CANDIDATES ARE ADVISED TO APPLY DIRECT TO THE DIRECTORATE INDIVIDUALLY FOR APPLICATION FORM AS WELL AS FOR ADMISSION. APPLICATIONS FOR ADMISSION RECEIVED THROUGH TUTORIALS OR ANY OTHER AGENCY WILL BE SUMMARILY REJECTED.

Admission cannot be claimed as a matter of right and the Directorate reserves to itself the right of admission.

No. A1/6/92-93
Place : Annamalainagar
DATE : 18-05-1992

Dr. K. AYYAKKANNU
DIRECTOR

CURRENT DOCUMENTATION IN EDUCATION

A list of select articles culled from periodicals received in AIU Library during May 1992

EDUCATIONAL ADMINISTRATION

Albornoz, Orlando. Autonomy and accountability in higher education. **Prospects** 21(2), 1991, 204-13.

Andersen, Kenneth E. Anatomizing bloat. **Academe** 77(6), 1991, 20- 4.

Bergmann, Barbara R. Bloated administration, blighted campuses. **Academe** 77(6), 1991, 12-6.

Fouquet, Irene. Regional support of industry: University links in France. **Industry & Hr Edn** 6(1), 1992, 34-5.

Halfond, Jay A. How to control administrative cost. **Academe** 77(6), 1991, 17-9.

Rath, Nilakantha. Higher education: Plea for reorganisation. **Eco and Pol Weekly** 27(10 & 11), 1992, 535-9.

Smith, George. Responsibility for staff development. **Studies in Hr Edn** 17(1), 1992, 27-41.

Tilak, Jandhyala B G. Privatization of higher education. **Prospects** 21(2), 1991, 227-39.

TEACHERS & TEACHING

Boice, Robert. Quick starters: New faculty who succeed. **New Directions for Teaching and Learning** 48, 1991, 111-21.

Brinko, Kathleen T. Interactions of teaching improvement. **New Directions for Teaching and Learning** 48, 1991, 39-49.

Doyle, Kenneth O. Report on a trip downtown. **New Directions for Teaching and Learning** 48, 1991, 123-6.

Geis, George L. Moment of truth: Feeding back information about teaching. **New Directions for Teaching and Learning** 48, 1991, 7- 19.

Granton, Patricia and Knoop, Robert. Incorporating job satisfaction into a model of instructional effectiveness. **New Directions for Teaching and Learning** 48, 1991, 99-109.

Gray, Peter J. Using assessment data to improve teaching. **New Directions for Teaching and Learning** 48, 1991, 53-63.

Lewis, Karron G. Gathering data for the improvement of teaching: What do I need and how do I get it? **New Directions for Teaching and Learning** 48,1991, 65-82.

Menges, Robert J. Real world of teaching improvement: A faculty perspective. **New Directions for Teaching and Learning** 48, 1991, 21-37.

Theall, Michael and Franklin, Jennifer. Using student ratings for teaching improvement. **New Directions for Teaching and Learning** 48, 1991, 83-96.

Thomas, Alan J. Individualised teaching. **Oxford Rev of Edn** 18(1), 1992, 59-74.

ECONOMICS OF EDUCATION

Ghosh, Arun. Education for all: The financing problem. **Eco and Pol Weekly** 27(14), 1992, 679-83.

Obulesu, K. Educational expenditure and beneficiaries: A case study. **Yojana** 36(7), 1992, 27.

VOCATIONAL EDUCATION

Lam, A C L. Continuing technological education: The Japanese perspective. **Industry & Hr Edn** 6(1), 1992, 20-3.

Markkula, Markku. Continuing engineering education: A European perspective. **Industry & Hr Edn** 6(1), 1992, 30-3.

ADULT EDUCATION

Paul, M C. Role of adult and continuing education. **Yojana** 36(6), 1992, 23-5.

COMPARATIVE EDUCATION & COUNTRY STUDIES

Gungwu, Wang. Universities in transition in Asia. **Oxford Rev of Edn** 18(1), 1992, 17-27.

THESES OF THE MONTH

A list of Doctoral Theses accepted by Indian Universities

BIOLOGICAL SCIENCES

Forensic Sciences

1. Sharma, Anil Kumar. **Blood groups and enzyme types from teeth.** Punjabi. Dr P K Chattopadhyay, Prof, Department of Forensic Science, Punjabi University, Patiala.

Biology

1. Chakraborti, Susanta Kumar. **Ecology and community interaction of fiddler crabs (Decapoda: Brachyura) of Sundarbans mangrove ecosystems, West Bengal, India.** Calcutta.

2. Mohan Rajan, K V. **Studies on spin lobster fishery of the South West Coast of India.** CUST. Dr M Shahul Hameed, Prof and Head, Department of Industrial Fisheries, Cochin University of Science and Technology, Kochi.

3. Neelakanta Pillai, N. **Studies on the life history of some carideans of the South West Coast of India.** CUST. Dr E G Silas, Vice Chancellor, Kerala Agricultural University, Vallanikkara.

Biochemistry

1. Bokkala Shailaja. **Calcium related changes in platelets and lymphocytes of Duchenne muscular dystrophy and normal amniocytes.** Osmania.

2. Hariharan, Tara. **Mitochondriogenesis in yeast: Integration of cytosocially synthesised dehydrogenases into mitochondria: Studies on malate dehydrogenase in yeast.** Madurai.

3. Mathews, Suresh T. **Blood lipid peroxidation in human** Plasmodium vivax **malaria.** Madras.

4. Narayanasamy, K. **Metabolism of acrylonitrile by bacteria isolated from petrochemical waste waters.** Baroda.

5. Panneerselvam, K. **Brain hydrolases: Phosphorylation of the lysosomal enzyme binding receptor protein from monkey brain.** Madras.

6. Sekar, P S. **Studies on blood antioxidants in patients with diabetes mellitus.** Madras.

7. Unnikrishnan, M C. **Anticancer and antimutagenic effect of selected spices.** Calicut. Dr Ramadasan Kuttan, Amala Cancer Research Centre, Amalanagar, Trichur.

8. Venkata Ramana, V. **Studies on uric acid, allanticin and nitrogen metabolism in plants and microorganisms: Synthesis and properties of chromium-uric acid complexes.** Osmania.

9. William, S. **Biochemical studies on the adverse effect of morphine and the antagonistic influences of naloxone in rats.** Madras.

Microbiology

1. Bal, Param Pal. **Studies on anaerobic digester microflora and biogas production.** PAU.

2. Meera, G. **Biodegradation of pesticides: Studies on an endosulfan degrading bacterium.** Madurai.

3. Munavar, M Hussain. **Genetic regulation of metabolic processes in** Escherichia coli: **Genetic and physiological studies on fit B, a suppressor of fit A: Fit A-Fit B-RNA polymerase interaction** In vivo. Madurai.

4. Wankhede, Sharad Madhaorao. **Microbial transformation of tomatine.** Dr G B Shinde, Department of Biochemistry, Nagpur University, Nagpur and Dr K V Shankhapal, Department of Biochemistry, Nagpur University, Nagpur.

Botany

1. Agnihotri, Abha. **Production, evaluation and DNA analysis of three hybrids of oil seed brassicas with their wide allies.** Delhi.

2. Bhattacharya, G S. **Ecological assessment of some agroecosystems of the Saurashtra Region, Gujarat, India.** Saurashtra.

3. Chauhan, Neelam Prabha. **Stress-induced changes in photosynthetic apparatus.** Jamia Millia. Dr Tasneem Fatima, Department of Bio-Sciences, Jamia Millia Islamia, New Delhi and Dr G S Singhal, School of Life Sciences, Jawaharlal Nehru University, New Delhi.

4. Cheema, Paramjeet. **Cytomorphological studies on members of family Cyperaceae from Punjab plain and adjoining regions.** Punjabi. Prof S S Bir, Department of Botany, Punjabi University, Patiala and Dr (Mrs) M K Sidhu, Department of Botany, Punjabi University, Patiala.

5. Chouksay, Pramila. **Taxonomic study of phytoparasitic fungi from phanerogamic flora of Sagar, M P, with special reference to hyphomycetes.** H S Gour. Dr A N Rai, Department of Botany, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

6. Elisha Mothikumar, K. **Saline soil detection in Matar taluka of Gujarat by satellite remote sensing and its correlation with vegetational status.** Baroda.

7. Ghai, Raminder. **Physiological studies on akinete differentiation in** Scytonema fritschii **Ghose and its mutants.** Punjabi. Dr T A Sharma, Reader, Department of Botany, Punjabi University, Patiala.

8. Goje Laxman Rao. **Studies on the ecology of soil fungi and VAM fungi from Nirmal forests, Adilabad District, Andhra Pradesh, India.** Osmania.

9. Krishnaprabhu, S. **Microbiological study of Bay of Bengal, Madras Coast.** Madras.

10. Kushwaha, S P S. **Ecological studies of** Phragmites karka **(Retz) Trin Ex. Stend with emphasis on primary production and nutrient dynamics.** Rajasthan. Dr K P Sharma, C-141 A, Mahaveer Marg, Malviya Nagar, Jaipur.

11. Mitra, Subrata. **Fungal degradation of agroindustrial wastes and mycoprotein production.** Burdwan. Dr Balen Nandi, Prof, Department of Botany, Burdwan University, Rajbati.

12. Sadhu, Asit Kumar. **Microbial deterioration and associated biochemical changes in "hardfat" of seeds of** Shorea robusta **Geertn F.** Burdwan. Dr Balen Nandi, Prod, Department of Botany, Burdwan University, Rajbati.

13. Tiwari, Vishwa Nath. **Effectiveness of selection methods in improving yield of wheat.** Durgawati. Dr S P Gautam, Department of Bio-Science, Rani Durgawati Vishwavidyalaya, Jabalpur and Dr C B Singh, Prof and Head, Department of Plant Breeding and Genetics, Jawaharlal Nehru Krishi Vishwavidyalaya, Jabalpur.

Agriculture

1. Darshan Kumar. **Studies on the parasitoids and predators of** Lipaphis erysimi **(Kaltenbach) (Aphididae: Hemiptera) their relation with host and host plant and utilization in control.** PAU.

2. Jagtar Singh. **Integrated weed control in American cotton,** Gossypium hirsutum **L.** PAU.

3. Joshi, Kishorkumar Indulal. **Studies on water requirement of fig,** Ficus carica **L and drying of fig fruits.** Marathwada. Dr K W Anserwadekar, Senior Research Officer, Marathwada Agricultural University, Parbhani.

4. Kapila, Rakesh Kumar. **Cytogenetic reconstruction of bread-wheat genome following triticale X wheat hybridization at different ploidy levels.** HP Krishi. Dr G S Sethi, Department of Plant Breeding and Genetics, College of Agriculture, Palampur.

5. Manav Indra Singh. **Studies on somatic cell and protoplast culture in mandarins.** PAU.

6. Meitei, Wahengbam Ingo. **Dynamics of yield accumulation as influenced by mulching in terrace-slope planting, spacing and nutrition of pineapple,** Ananas cosmosus **(L) Merr under hill conditions of Manipur.** Manipur. Dr S C Kundu, Department of Life Sciences, Manipur University, Imphal and Dr A Ibopishak Singh, Department of Agronomy, Manipur Agricultural College, Iroishemba, Manipur.

7. Mor, Ram Pal. **Effect of salinity and boron in relation to phosphorus on the growth and mineral composition of pea,** Pisum sativum **L.** HAU.

8. Parshotam Kumar. **Effect of diflubenzuron on the development and reproduction of** Bradysia tritici **Coq. and its residues in mushrooms.** PAU.

9. Patil, Jagannath Vishnu. **Genetics of resistance to stem rust,** Puccinia graminis f sp tritici **of wheat,** Triticum aestivum **L.** Mahatma Phule. Dr A B Deokar, Assoc Director of Research, NARP, Plain Zone, Regional Fruit Research Station, Ganeshkhind, Pune.

10. Roy, Meeta. **Induction of genetic variability in mungbean,** Vigna radiata **(L) Wilczek.** Birsa Agrl.

11. Suryawanshi, Angad Pandharinath. **Defence mechanisms in groundnut against late leaf spot** Phaeoisariopsis personata **(Berk & Curt) V.Arx.** Marathwada. Dr C D Mayee, Ex-Prof, Department of Plant Pathology, Marathwada Agricultural University, Parbhani.

12. Thakur, Kedar Nath. **Phosphorus dynamics and efficacy of herbicides under different methods of upland rice cultivation in calcareous soil.** Rajendra Agrl.

Zoology

1. Chakroborti, Chandra Shekar. **Ultrastructural and genetical studies on the pre-adult and adult of** Drosophila ananassae. Burdwan. Dr Sudhangsu Kr Ghoshal, Prof, Department of Zoology, Burdwan University, Rajbati.

2. Ghosh, Kasinath. **Studies on some biological aspects of** Phlebotomus argentipes **and** Annandale brunetti. Calcutta.

3. Jain, Narendra. **Ethological and neuromorphometrical studies on the tritium induced changes in developing mouse cerebellum.** Rajasthan. Dr A L Bhatia, Asstt Prof, Department of Zoology, University of Rajasthan, Jaipur.

4. Jirankali, Chandrashekhar Shankarappa. **Reproductive biology of some anuran amphibians.** Karnatak. Dr R D Kanamadi, Reader, Department of Zoology, Karnatak University, Dharwad.

5. Krishna Prasad, B S. **Histopathological studies on the ovary in the garden lizard,** Calotes versicolor. Karnatak. Dr (Mrs) B A

Shanbhag, Lecturer, Department of Zoology, Karnatak University, Dharwad.

6. Kuzhivelil, Balu T. **Studies on nitrogen metabolism in Orthaga exvinacea Hampson (Pyralidae: Lepidoptera).** Calicut. Dr U V K Mohamed, Department of Zoology, University of Calicut, Calicut.

7. Lakshmi Narayan. **Biology of some Indian Tenthredinid sawflies (Hymenoptera: Tenthredinidae).** Punjabi. Dr M S Saini, Reader, Department of Zoology, Punjabi University, Patiala.

8. Malla Rao, B. **Seasonal community structure of benthic macroinvertebrates in the shallow zones of different fresh-water ecosystems polluted with organic wastes-municipal sewage and textile industry effluents.** Kakatiya. Dr M Vikram Reddy, Reader, Department of Zoology, University Arts & Science College, Warangal.

9. Malviya, Suresh Kumar. **Studies on the selective action of insecticides on bean aphid,** Aphis craccivers Kosh **and their natural enemies.** Durgawati. Dr V P Gargava, Joint Director, Department of Entomology, Jawaharlal Nehru Krishi Vishwavidyalaya, Jabalpur; Dr O N Bhardwaj, Department of Zoology, Govt Science College, Jabalpur and Dr A K Khatri, Department of Entomology, Jawaharlal Nehru Krishi Vishwavidyalaya, Jabalpur.

10. Prakash, D J. **Some motor and sensory organizational patterns related to the hand of primates.** Madras.

11. Ray, Basavdutta. **Influence of prolactin on the epididymal lipid profiles of male albino rats.** Roorkee.

12. Rupinder Kaur. **Effect of industrial effluents on reproductive and developmental biology of** Cyprinus carpio **Linn.** PAU.

13. Samanta, Subhas. **Surface ultrastructural, histochemical and biochemical findings of the cuticle of some nematode parasitic to vertebrates.** Burdwan. Dr Giridhari Majumdar, Prof, Department of Zoology, Burdwan University, Rajbati and Dr Chittaranjan Maity, Prof, Department of Biochemistry, Burdwan Medical College, Burdwan.

14. Sanayaima Devi, Sorokhaibam. **Reproductive biology and certain aspects of conservation of wild life** Cervus eldi eldi **in Manipur.** Manipur. Dr P Raikumar Singh, Director, College Development Council, Manipur University, Imphal.

15. Sharmila Rani. **Comparative studies of some biochemical aspects of a trematode and a nematode species infecting the gastro-intestinal tract of vertebrates.** Burdwan. Dr Giridhari Majumdar, Prof, Department of Zoology, Burdwan University, Rajbati.

16. Sumodan, P K. **Studies on the braconid fauna (Hymenoptera: Braconidae) of Kerala.** Calicut. Dr T C Narendran, Department of Zoology, Calicut University, Calicut.

17. Syntem, Rigaphy. **Studies on some aspects of the biology of the honeybee,** Apis cerana indica **Fab.** NEHU. Dr A Raghu Varman, Department of Zoology, North-Eastern Hill University, Shillong.

18. Upadhyay, Sanjay Kumar. **Studies on the role of photoperiod in the regulation of reproductive physiology in some Indian birds.** Magadh.

19. Varghese, P R. **Epidemiological and dermatoglyphic studies of cancers in the population of Trichur District, Kerala State.** Calicut. Dr N B Elayidom, Sreevilas, P O Kalady, Ernakulam District.

Medical Sciences

1. Ananda Theertha Varada, H K. **Bioactivation and cellular protective systems in the CNS.** Bangalore. Dr Vijayalakshmi Ravindranath, Assoc Prof, Department of Neuro-Chemistry, National Institute of Mental Health and Neuro Sciences, Bangalore.

2. Banumathy, S P. **Study of the human hard palate.** Madurai.

3. Brahma Jothi Bai, V. **Studies on HLA association in health and disease amongh selected groups of Tamil Nadu.** Madurai.

4. Dutt, Parmesh. **Immunochemical characterization and immunodiagnostic potential of** Giardia lamblia **specific stool antigens employing mono-specific and monoclonal antibodies.** PGI.

5. Gangwar, Madhurama. **Studies on thermophilic actinomycetes: Environmental prevalence and role in hypersensitivity lung disorders.** Delhi.

6. Jain, Sanjay Kumar. **Development of polymeric transdermal drug delivery system of some drugs.** H S Gour. Dr V K Dixit, Head, Department of Pharmaceutical Sciences and Dr S P Vyas, Reader, Department of Pharmaceutical Sciences, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

7. Nagaraja, T N. **Study of harmful effects of metallic and pesticidal pollutants of environment and of effects of food colouring additives on brain and behaviour.** Bangalore. Dr T Desiraju, Prof and Head, Department of Neurophysiology, National Institute of Mental Health and Neuro Sciences, Bangalore.

8. Sridevi, K. **Modification of genetic damage induced by environmental agents with prostaglandin E1 and its precursors.** Osmania.

Animal Husbandry

1. Thulasi, G. **Effect of chlorine wash water spray treatment on sheep carcasses.** T N Vet. Dr I Alfred Jayaprasad, Director of Technology, Transfer-plan on Poultry Broilers, Poultry Research Station, Madras.

2. Venugopal Naidu, K. **Studies on postnatal changes in reproductive organs and plasma testosterone level of Madras Red Rams maintained under grazing or feedlot systems.** T N Vet. Dr S R Pattabiraman, Prof and Head, Department of Clinics, Madras Veterinary College, Madras.

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DIRECTORATE OF DISTANCE EDUCATION
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I. FOUNDATION COURSES (English and Tamil Medium)

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II. UNDERGRADUATE COURSES:

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2. B.A. Sociology (English and Tamil Medium)
3. B.A. Psychology (English Medium)
4. B.A. Economics (English Medium)
5. B.A. English
6. B.Lit. (Tamil)
7. B.Com. (English and Tamil Medium)
   Eligibility : A pass in Pre-University/Higher Secondary Examination/Second year Foundation Course or an equivalent examination.
8. B.Sc. Mathematics (English and Tamil Medium)
   Eligibility: A pass in Pre-University/Higher Secondary Examination/Second year Foundation Course or an equivalent examination with Mathematics as one of the subjects.
9. B.B.A. (Bachelor of Business Administration (English Medium)
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III. POSTGRADUATE COURSES

Duration : Two years

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3. M.A. History (English and Tamil Medium)
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   Eligibility : B.A. Economics or B.Sc. Statistics/B.Sc. Mathematics with 50% of marks in Part III of the B.Sc. Degree.
5. M.A. Psychology (English Medium)
   Eligibility: B.A. (Psychology)/Any other B.A. or B.Sc. with 40% of marks in part III.
6. M.A. Sociology (English Medium)
   Eligibility: B.A./B.Sc.
7. M.Sc. Mathematics (English Medium)
   Eligibility: B.Sc. Mathematics/B.Sc. Statistics
8. M.Sc. Physics (English Medium)
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   ii) Research Assistants in Research Institutions/ Research Laboratories.
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   iii) Graduates with first class in B.Sc. Physics (60% of marks and above only)
9. M.Sc. Chemistry (English Medium)
   Eligibility: Candidates with B.Sc. (Chemistry Main with Physics as one of the ancillary subjects) degree qualification working as
   i) Teachers in recognised schools
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   iii) Graduates with first class in B.Sc. Chemistry (60% of marks and above only)
10. M.Sc. Zoology (English Medium)
    Eligibility: Candidates with B.Sc. (Zoology Main with Chemistry as one of the ancillary subjects) degree qualification working as
    i) Teachers in recognised schools
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    ii) Research Assistants in Research Institutions/Research Laboratories
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    iii) Graduates with first class in B.Sc. Zoology (60% of marks and above only)
11. M.Sc. Botany (English Medium)
    Eligibility: Candidates with B.Sc. (Botany Main with

Chemistry as one of the ancillary subjects)
degree qualification working as
i) Teachers in recognised schools
or
ii) Research Assistants in Research
Institutions/Research Laboratories
or
iii) Graduates with first class in B.Sc. Botany
(60% of marks and above only)

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IV. OTHER DIPLOMAS

Duration: One year

1. Post-graduate Diploma in Sociology (English Medium)
   Eligibility: Any Degree including Medicine, Engineering, Law and Agriculture.
2. Post-graduate Diploma in Econometrics (English Medium)
   Eligibility: Post-graduate in Economics, Demography, Statistics, Commerce, Business Administration and Professionals in Engineering.
3. Post-graduate Diploma in Management Accounting (English Medium)
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5. **VELLORE:** 4, Thiagarajapuram, Vellore-632 001.
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6. **MADURAI:** 176, North Veli Street, Madurai-625 001.
7. **COIMBATORE:** 72, Sarojini Street, Ram Nagar,
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8. **NEW DELHI:** 46, (SFS) Basant Enclave, New Delhi-110 057
(Phone No. 6875567)
9. **ANNAMALAI-NAGAR:** DDE Building, Annamalai University
Annamalainagar- 608 002.

All the study centres except Annamalainagar will remain closed on all Tuesdays, Second Mondays and all other public holidays.

SPOT ADMISSION:

Spot selection for admission to the above courses will be made through all our Study Centres from 01-06-1992 if the applicants submit, along with their applications the necessary original certificates, Demand Draft for prescribed fee and two copies of their stamp size photographs. The spot selection is provisional and subject to confirmation by the Director.

Those who want to get applications by post should apply to the Directorate only and not to the study centres.

Filled in applications should be sent only to the **Director, Directorate of Distance Education, Annamalai University, Annamalainagar, Tamil Nadu, Pin Code 608 002.** IN NO CASE FILLEDIN APPLICATIONS SHOULD BE SENT TO THE STUDY CENTRES.

Applications and Prospectus can be had from the Directorate of Distance Education, Annamalai University, Annamalainagar, and the Study Centres from 01.06.1992.

REIMBURSEMENT OF NON-REFUNDABLE FEE FOR SC/ST STUDENTS :

As per the G.O. MS. No. 2040 dt. 20.10.1989 of Government of Tamil Nadu, the reimbursement of non-refundable fee for SC/ST students pursuing Correspondence Courses is permissible.

CAUTION

SOME PRIVATE INSTITUTES/INDIVIDUALS POSING AS OUR AGENTS ARE ALLEGEDLY COLLECTING FEES, ISSUING APPLICATION FORMS AND PROMISING ADMISSION TO OUR COURSES. THE DIRECTORATE HAS NO SUCH AGENTS AND TAKES NO RESPONSIBILITY FOR THEIR ACTIONS. CANDIDATES ARE THEREFORE ADVISED TO CORRESPOND DIRECTLY WITH THE DIRECTORATE ONLY.

CANDIDATES ARE WARNED NOT TO BECOME VICTIMS OF CHEATING AND EXPLOITATION BY BOGUS CLAIMANTS IN THIS REGARD.

THE CANDIDATES ARE ADVISED TO APPLY DIRECT TO THE DIRECTORATE INDIVIDUALLY FOR APPLICATION FORM AS WELL AS FOR ADMISSION. APPLICATIONS FOR ADMISSION RECEIVED THROUGH TUTORIALS OR ANY OTHER AGENCY WILL BE SUMMARILY REJECTED.

Admission cannot be claimed as a matter of right and the Directorate reserves to itself the right of admission.

No. A1/2/92-93
Place : Annamalainagar
DATE : 18-05-1992

Dr. K. AYYAKKANNU
DIRECTOR

MINISTRY OF HUMAN RESOURCE DEVELOPMENT
DEPARTMENT OF EDUCATION

FRENCH GOVERNMENT SCHOLARSHIP 1992-93

Applications are invited on plain paper as per the prescribed format from Indian nationals for the award of one (1) French Government Scholarship for the year 1992-93 in Architecture.

DURATION : 12 months.

VALUE: Training fees and stipend (subsistance allowance).

TRAVELLING EXPENSES : Air passage from India to France and back will be provided by the French Government.

ACADEMIC QUALIFICATIONS REQUIRED : The candidates must possess B.Arch. Degree with 60% or above marks and two years experience as on 1.4.1992 or practical training/teaching/specialisation in the line after the degree.

NOTE: Conversion formula should be given where gades have been awarded by University Institutions.

FRENCH LANGUAGE : Candidates having a very good knowledge of French language will be given preference.

PLACEMENTS : Confirmed acceptance from a French institution will be an additional qualification. Documentary evidence of this must be sent alongwith the application.

NOTE:1. The following documents must be attached with the application (a) Attested copy of the certificate certifying the date of birth (b) Candidates belonging to SC/ST must attach a copy of certificate to this effect (c) Attested copies of marks sheets of the qualifying examination (d) Attested copies of all degrees/diplomas/certificate etc. (e) Candidates must furnish a clear and precise programme of study/research (f) A recent passport size photograph of the candidate must be affixed on the prescribed application form. (2) Application in the subject-field other than those specified above will not be considered. (3) Candidates who have already been abroad for study/research/specialisation/training either on a scholarship or on their own for more than six months may apply if they have been in India for at least three consecutive years after their return. (4) Applications of candidates who are at present abroad, will not be considered. (5) Candidates having contacts with Professors/placement at the Institutes of donor country will be given preference. (6) Candidates should have sufficient knowledge of India and the Donor country. (7) Applications which do not contain any of the required documents will not be considered. (8) No correspondence will be made with candidates not selected for interview/scholarship. (9) Canvassing in any form will be a disqualification. (10) Candidates who are in employment must send their applications duly sponsored by their employers. (11) Applications received late will not be entertained. Candidates should send their application for the above scholarship to the UnderSecretary, Department of Education , Ministry of Human Resource Development, A.1/W.3, Curzon Road, Barracks. Kasturba Gandhi Marg, New Delhi-110001. **The last date of receipt of applications is 30.06.1992.**

------------ APPLICATION FORM------------

Passport size photograph duly signed in ink to be pasted here (without photograph application will be considered incomplete).

1. Scheme under which applied :
2. Subject :
   Sub-subject :
3. Name in full as in passport Dr/Shri/Smt/Kumar :
   (Surname) (First name)
   Second name
4. Name of father :
5. Name of the sponsoring authority and/or name of the authority which will employ you on return from abroad :
6. a) Date of Birth :
   b) Place of Birth :
7. a) Are you a citizen of India :
   b) State to which you belong :
   c) Are you a member of Scheduled Caste Scheduled Tribe. If so, give particulars and attach a certificate from the District Magistrate of your place of residence in support of your claim.
   For official use only A----Q------E
8. Address of the applicant with pin code number :
   i) Present/Mailing :
   ii) Permanent :
9. Particulars concerning Examinations passed commencing with Marticulation or equivalent examination (attach attested photocopy of each certificate/diploma/degree for record).

University/ Board/ Institution	Examination passed with year	Class/ Div.	Percentage of marks & position if any	Subject taken

10. a. Details of papers published, if any :
    b. What you have been doing since last examination mentioned under Col.9.
11. a. Particulars of employment :

Office/Instt. where employed	Date of joining	Date of leaving	Post held	Monthly salary	Nature of duties

    b. Have you any contact obligation with your employer? If so, furnish details.
12. a. Knowledge of foreign languages, if any (attach proof if possible).

Skill		Very good	Good	Fair	Nil
Comprehension	Spoken				
	Written				
Expression	Spoken				
	Written				

13. Nature of proposed programme of study/research:
    a. Field of study
       Main subject :
       Sub-subject :
    b. Scholarship/Fellowship desired for Training/ Specialisation:
       Doctoral/research :
       Post-doctoral study/research :
    c. Name of the Institution (if known) where admission/ training is desired (in order of preference):
    d. Are you willing to accept a place at some other institution if the appropriate scholarship agency recommends it?
    e. Have you already approached any University or University Professor in the country in which you intend to study? If so, give name & results.
    f. Degree sought, if any;
    g. Give separately in extra sheets, brief statement in about 100 words each about:
       a. The work engaged in
       b. Nature, programme of study/research desired.
14. Future prospects after studies/research.
    a. Plan for the future.
    b. How are these related to the technical or economic development of the country?
15. a. Have you applied for any other scholarship in the last two

years? If so, state the name(s) of the scholarship(s) and the subject of study/research proposed therein. Are you willing to be considered under any similar scholarship scheme involving study in another country? If so, which?

b. If you had applied under this scheme previously please indicate the result.

16. Give below the names of two persons (they must not be related to you) who are in a position to testify from their personal knowledge as to your fitness for the proposed courses of study. They must be persons under whom you have worked or studied.
   i) Name with full address :
   ii) Name with full address :

17. Have you ever been abroad? If so, give the following particulars

Country visited	Date of visit	Duration of visit	Purpose of visit	Scholarship (s) received, if any

18. Father's name (in full) :
   a. Nationality :
   b. Occupation :
   c. Address :

19. In case you are married, please state :
   a. The name of your wife/husband with full address :
   b. Nationality :
   c. Occupation (Please give designation with full address if he/she is employed):

20. Next of kin to be notified in the case of emergency (give name, address and relationship).

21. I hereby declare that the entries in this form and the additional particulars (if any) furnished in reply to the questions above are true to the best of my knowledge and belief.

(Signature of the candidate)

Place :
Date :

22. I understand that if I fail to avail myself of this scholarship, under any circumstances, the Government of India will not consider me for any scholarship being administered by them for a minimum period of atleast one year from the date by which this scholarship should have commenced.

(Signature of the candidate)

Place :
Date :

23. a. Certified that Shri/Smt./Km ------------------ is employed by us/me. He/She has been working here as---------since -------- and has been sponsored by us/me for study abroad.

b. He/She will be relieved by me/us, if selected.

c. I/We undertake that he/she will be permitted to join his/her department/organisation on return from study abroad. I/We will ensure that his/her terms and conditions of service i.e. salary seniority, promotion, leave etc. will not be adversely affected on account of his/her absence and further that everything possible will be done to provide the scholar with work and conditions of service suitable to and commensurate with his/her qualifications/training obtained abroad.

(Signature of Employer/Sponsoring authority)

Place :
Date :

Seal of Office
davp 92/95

Jagadguru Sri Shivarathreeshwara Mahavidyapeetha

Ramanuja Road, Mysore-570 004

J.S.S. College of Pharmacy, Sri Shivarathreeshwara Nagara, Mysore-570 015

Affiliated to University of Mysore for B.Pharm & M.Phare course AND Pharmacy Council of India, New Delhi, for B.Pharm & D.Pharm Courses.

ADMISSION NOTIFICATION-1992-93

Applications are invited for admission to Diploma in Pharmacy (D.Pharm) Bachelor of Pharmacy (B.Pharm) and Master of Pharmacy (M.Pharm) for the academic year 1992-93.

ELIGIBILITY:

1. **Diploma in Pharmacy:** Two years course.

a) Candidates who have passed S.S.L.C. or equivalent examinations are eligible for admission to I Year D.Pharm.

b) Candidates who have passed HSC/PUC/PDC or I B.Sc., with Science combination are eligible for admission to II D.Pharm.

2. **Bachelor of Pharmacy:** Four years course.

a) Candidates who have passed II PUC or equivalent examination with PCMB., or PCB or PCM securing not less than 50% of marks (Both years of PUC or its equivalent) with Science subjects are eligible for admission.

OR

b) Candidates having 50% aggregate marks in the Final D.Pharm of the two year D.Pharm course conducted by an authority approved by Pharmacy Council of India are eligible for admission.

OR

c) B.Sc., Degree of Mysore University with PCM/PCB or a B.Sc., Degree with the same combination of subject of any other University with a minimum of 50% of the aggregate marks of all the 3 years of examination, in case of SC/ST the minimum marks required shall be 40%.

3. **Master of Pharmacy:** (M.Pharm Degree) Course in Industrial Pharmacy - Two years Course.

Admission shall be open only for candidates who,

a) have passed the B.Pharm degree of University of Mysore or any other Recognized Indian University, and

b) has secured not less than 55% marks in the aggregate of all parts of the B.Pharm degree.

Application form with Prospectus can be had from the College on payment of Rs.50 by Cash or Rs.55 by D.D. or Crossed Indian Postal Order drawn in favour of Principal. J.S.S. College of Pharmacy, Sri Shivarathreeshwara Nagara, Mysore-570 015. Money Order will not be accepted.

Hostel facilities are available to both boys and girls separately.

The Session will start from 15th July 1992 for D.Pharm and 5th August 1992 for B.Pharm.

H.C.Basavanna
Hon. Secretary

CLASSIFIED ADVERTISEMENTS

SALIM ALI CENTRE FOR ORNITHOLOGY AND NATURAL HISTORY(SACON)

Kalampalayam, P.O., Coimbatore-641 010

(An autonomous Research Orgnaization fully funded by the Ministry of Environment and Forests, Government of India)

Advt. No. 4.

Invites application for the following posts:

1. **SENIOR STATISTICIAN** : One post

Scale of Pay : 4500-150-5700

Age : Below 45 Years

Ph.D in Physical, Biological or Environmental Science on a topic related to mathematical ecology. Total 15 years' experience in analysis of biological data. **Desirable** : Experience in designing statistical basis for ecological/behavioural research projects and also giving support of the analysis of data. Should be strong in computer analysis.

Job requirement : The incumbent should be dynamic, capable of providing statistical support while designing research programme of all the research divisions and actively help in the analysis of data. Should set up the division as a common facility and formulate and execute research programmes of its own. Should also develop and co-ordinate interdivisonal programmes.

2. **Scientist (Ecotoxicology)** : One post

Scale of Pay : 3000-100-125-4500

Age : Below 35 years

QUALIFICATION AND EXPERIENCE

Ph.D in any branch of Life Sciences, based on a problem related to pesticide or heavy metal pollution in the biota especially on wetland birds. Total 5 years' research experience in the studies on pesticide or heavy metal contamination in the wetland environment. **Desirable** : Experience in analysis of pesticide and heavy metal pollutants in aquatic environment, especially on wildbirds. Exposure to modern analytical equipment, experience in the field identification of birds, and a working knowledge on the wetland ecosystem.

Job requirement

The incumbent should be dynamic, capable of setting up a laboratory for the analysis of pesticide and heavy metal pollutants. Should be competent to take up independent projects and to conduct survey of wetland and also to study the pollution aspect of any of the wetlands in India.

Note:

1. The pay, allowance etc., are admissible as per Central Government norms. Other benefits include CPF, Medical reimbursement, LTC, etc., as per rules of the SACON.

2. Qualification and experience may be relaxed at the discretion of the SACON.

3. Candidates should indicate name and address of three referees in responsible position who can comment on their suitability for the post, failing which their application will be considered incomplete.

4. Application on plain paper with complete biodata and copies of testimonials should reach the Director, Salim Ali Centre for Ornithology and Natural History, Kalampalayam Post, Coimbatore 641 010 with in 20 days of publication of this advertisement. Biodata should be in the following format: 1. Name, 2. Age and date of birth, 3. Permanent address, 4. Present address, 5. Qualifications with grade obtained in each, 6. Total years of research experience, 7. Positions held with details of pay and responsibilities, 8. Present position, 9. Fellowships and awards obtained, 10. Number of research papers, short notes, reports and extension papers published, and 11. Any other relevant information. Applications not received in the above format are liable to be rejected.

5. SACON will decide the cut-off point for calling the candidates for interview based on the academic qualification and experience.

6. Salim Ali Centre for Ornithology and Natural History is a new research Centre being established in memory of the late Dr. Salim Ali and is expected to become a Centre of international repute. Only those who are highly motivated, creative and committed to the cause of nature conservation and, prepared to put in strenuous work both in the field and the laboratory with bare minimum facilities need apply.

MAR THOMA COLLEGE
Tiruvalla-3
WANTED

Lecturer: (1) Botany (leave vacancy)

(2) Physical Education (Ladies preferred)

Age and qualifications – As per Government/University rules.

Application forms can be had from the Principal, Mar Thoma College, Tiruvalla-3, on payment of Rs.50. Apply within one month from the date of publication of this notification.

PRINCIPAL

INDIAN COUNCIL OF MEDICAL RESEARCH

Applications are invited upto **30th June, 1992** for the post of Assistant Director, in the scale of pay of Rs.3700-125-4700-150-5000, on purely temporary leave vacancy basis at the Council's Institute of Cytology and Preventive Oncology, New Delhi.

Qualifications & Experience :Essential :a) MBBS/1st class M.Sc. in Life Sciences/Master's degree in related discipline with 12 years' research/teaching experience or M.D (Pathology)/Ph.D.(Life Sciences) with 10 years' research/teaching experience. **b)** Original work as evidenced by publications.

Job Requirements: a) Planning & implementation of research programme in the field of Cytopathology and related subjects. **b)** Diagnostic cytopathology in referral cases.

Age:- Below 45 years. SC/ST candidates allowed relaxation in accordance with Govt. of India Rules.

Allowances as per Central Govt. rules are admissible on the above pay scale. Private practice is not allowed. However, NPA as per rules of the Council is admissible to Medical graduates only.

Candidates called for interview will be paid 1st class rail fare by shortest route on production of documents.

Applications from employees working in Central/State Govt. Deptt./Public Sector Undertaking and Govt. funded research agencies must be forwarded through proper channel.

Application forms can be obtained from the office of the **Director General, Indian Council of Medical Research, Ansari Nagar, Post Box No. 4508, New Delhi- 110029.**

Forms duly completed should be sent to the Director General, Indian Council of Medical Research, Ansari Nagar, Post Box No.4508, New Delhi-110029 with a crossed IPO for Rs.8 payable to the Director General, ICMR, New Delhi. SC/ST candidates are exempted from this payment.

Incomplete and late applications or without postal orders will not be entertained.

UNIVERSITY OF LUCKNOW

Advertisement No. 7/1992

WANTED

PROFESSOR (Rs.4500-150-5700-200-7300):

1. One temporary in Zoology

READERS (Rs.3700-125-4950-150-5700):

2. One temporary (likely to be made permanent) in Economics
3. One temporary in Ancient Indian History & Arch.
4. One in Chemistry

LECTURERS (Rs.2200-75-2800-100-4000):

5. Three temporary (likely to be made permanent) in Economics
6. One temporary (likely to be made permanent) in Ancient Indian History & Archaeology
7. One temporary (likely to be made permanent) in Anthropology
8. One temporary in Western History for teaching History & Culture of Asian Peoples
9. One in Library Science
10. Two temporary (likely to be made permanent) in Chemistry
11. Two temporary (likely to be made permanent) in Zoology

QUALIFICATIONS

As laid down in the Lucknow University First Statutes.

GENERAL

Benefits of Provident Fund/Pension available as admissible under the rules. Period of probation for permanent posts is one year. The number of posts can be varied.

Prescribed Application Forms can be obtained free of cost by sending a self-addressed envelope sized 23 x 10 cm. with postage stamps worth Rs.7 from the Office of the Registrar. Last date for submission of applications, duly completed in all respects, with recent testimonials, publications etc. and a Bank Draft of Rs.15 drawn in favour of the Registrar, Lucknow University, payable at any Bank in Lucknow, is **June 27,1992**. Candidates who are in service should send their applications through proper channel. Application Forms to outstation candidates will be sent up to **June20,1992**. Canvassing will be a disqualification.

A.N. Seth
REGISTRAR

MINISTRY OF WELFARE

CORRIGENDUM

CENTRAL SCHEME OF PASSAGE GRANTS AND NATIONAL OVERSEAS SCHOLARSHIPS FOR HIGHER STUDIES ABROAD FOR SCHEDULED CASTES AND SCHEDULED TRIBES ETC. STUDENTS FOR THE YEAR 1991-92 & 1992-93 which was published vide Advt No. davp 92/19 in University News on May/04, 1992.

The last date for supply and receipt of application forms duly completed has been extended by another one month i.e. upto **15th June, 1992.**

davp 430(8)92

AGRICULTURAL SCIENTISTS RECRUITMENT BOARD

KRISHI ANUSANDHAN BHAVAN, PUSA, NEW DELHI - 110012

CORRIGENDUM

Important note No. (ii) given under ASRB's Advertisement No. 1/92 published in Employment News etc. on 15.2.92 will also be applicable in respect of the post of Joint Director, Indian Agricultural Statistics Research Institute, New Delhi, appearing at S.No. 8 of the advertisement. Other contents of the advertisement remain unchanged.

The last date for receipt of applications in ASRB in respect of the post of Joint Director. Indian Agricultural Statistics Research Institute, New Delhi, is extended upto **26.6.1992.** Those, who have already applied, need not apply again.

davp 1020(1)92

INDIAN INSTITUTE OF TECHNOLOGY

KHARAGPUR

Applications are invited on plain paper from the Indian Nationals for the following faculty positions in Continuing Education Programme/C D Cell :

(A) **PROFESSOR** - (Temporary)

SCALE OF PAY : Rs. 5100-150-5700-200-7300 plus D.A. etc. as per Institute rules.

QUALIFICATION & EXPERIENCE :

Ph.D. in any branch of Engineering with first class or equivalent at the preceding degree in the appropriate branch, with a very good academic record throughout and a minimum of 10 years' teaching/research/industrial experience of which at least 5 years should be at the level of Assistant Professor and Associate Professor.

DESIRABLE : Experience in the field of Educational Technology and Continuing Education, with proven leadership capability.

LECTURER/ASSISTANT PROFESSOR - (Temporary)

SCALE OF PAY : Rs. 3000-100-3500-125-5000 (for Lecturer) Rs. 3700-125-4950-150-5700(for Assistant Professor) plus D.A. etc. as per Institute rules.

QUALIFICATION & EXPERIENCE :

Ph.D in any branch of Engineering, with first class or equivalent at the preceding degree in the appropriate branch, with a very good academic record throughout and at least three years' teaching/research/industrial experiences.

DESIRABLE : Experience in the field of Educational Technology and Continuing Education.

Application giving details of qualifications, experience, present salary, R/D achievements, list of publications, awards/honours and references with an application fee (non-refundable) of Rs 30 (candidates belonging to Scheduled Castes/Scheduled Tribes are exempted from paying application fee) by means of Crossed Indian Postal Order payable to IIT Post Office or Demand Draft drawn on S.B.I. Kharagpur should reach the undersigned by the **30th June, 1992.**

No. R/Advt.2/92 **S.Chander**
Dated 27th May, 1992 **REGISTRAR**

ARUNACHAL UNIVERSITY

DOIMUKH

Advertisement No.EG-157/87 **Dated Doimukh, the 23rd May'92**

Applications on prescribed form are invited from the citizen of India for the following posts :-

S.No.	Name of posts	Department	No. of posts	Scale of pay
1.	Professor	History	1	Rs.4500-150-5700-200-7300
2.	Professor	Political Science	1	-do-
3.	Profesor	Economics	1	-do-
4.	Reader	Political Science	1	Rs.3700-125-4950-150-5700

Minimum Qualifications :-

Professor :- An eminent scholar with published work of high quality actively engaged in research with ten years of experience in postgraduate teaching and/or research at University/National Level Institutions, including experience of guiding research at Doctoral level.

OR

An outstanding Scholar with established reputation who has made significant contribution to knowledge.

Reader :- Good academic record with a Doctoral degree or equivalent published work. In addition, candidates should also possess at least 55% marks or an equivalent grade at the Master's degree level in the subject.

Eight years' experience of teaching and/or research including upto 3 years for research degrees and has made some mark in the areas of scholarship as evidenced by quality of publications, contribution to educational renovation, design of new courses and curricula.

AGE :- Maximum age as on 01-07-92 should not ordinarily exceed 40 years in case of Reader and 45 years in case of Professors. Age limit is relaxable in cases of merit.

The posts are temporary at present but likely to continue. Candidates appointed will be provided with rent free accommodation.

The University reserves the right not to fill up any/or all posts advertised.

Application form and fees

Application should be made on plain paper (three copies) in the format given. It must be accompanied by an application fee of Rs.20 (Rs.10 in case of Scheduled Caste and Scheduled Tribe) by Bank Draft on State Bank of India, Itangar or Vijaya Bank, Arunachal University Campus, Doimukh, in favour of "Registrar, Arunachal Univeristy, Doimukh". Application should be sent under double cover — inner cover be sealed and superscribed "Application for the post of ....." The outer cover should contain the address of Registrar, Arunachal University, Doimukh- 791 112. Persons in employment should apply through proper channel or attach "No Objection Certificate" from the employer.

Interview :

Candidates may be required to appear at an interview as and when called for at the place to be communicated later.

Last Date for receiving of applications :-

The applications will be received by the undersigned latest by **23rd June, 1992**. Application should be accompanied with attested/photo copies of required certificates/mark sheets etc. Incomplete applications will not be entertained. The format of the application form is given below :-

The Format of the application form :-

1. Name
2. Date of Birth
3. Father's/Husband's Name
4. Address
5. Name of the post applied for
6. Educational Qualifications (with the year of passing and percentage of marks/class onward from 10+2 or equivalent)
7. Employment with the name of employers, Remuneration and period.
8. Research experience and list of publications.
9. Any other experience which fits with the requirement of the job.
10. Professional Membership and any other distinction.
11. How do you think you are a fit candidate for a challenging Teaching and Research position at this University?
12. No. and Names of testimonials attached
13. Names and address of the referees who are/were connected with your Academic/ Professional work.
14. No., date and place of issue of the Bank Draft.

(Please use additional sheets of paper wherever needed and send copies of one or two Research publications which you consider to be most important.

N.B :- The Candidates who have already applied in response to our advertisement appeared in various Newspapers during the month of March, 1992 need not apply again.

Date :- Signature of the Applicant
Place :-

Joram Begi
REGISTRAR

Postgraduate School
INDIAN AGRICULTURAL RESEARCH INSTITUTE
NEW DELHI - 110012
NOTICE FOR ADMISSION TO M.Sc. AND Ph.D. PROGRAMME
(1992-93 SEESION)

Applications in the prescribed forms are invited for admission to both M.Sc. and Ph.D., Programmes at the IARI in various disciplines of agricultural sciences as per details below :-

M.Sc. (12 Disciplines) (Total No. of seats 32, reserved for SC-5, for ST-2).

Agricultural Chemicals, Agricultural Engineering, Agricultural Physics, Agricultural Statistics, Computer Application in Agriculture, Environmental Sciences, Microbiology, Molecular Biology and Biotechnology, Mycology and Plant Pathology, Nematology, Plant Physiology, Seed Science and Technology.

NOTE: Only those candidates having their Bachelor's degree under 10+2+4 or 10+2+3 or 10+1+4 system will be eligible to be considered for admission to the M.Sc. programme. However, candidates having Bachelor's degree under **10+2+2 system prior to 1985** shall also be eligible for admission.

Ph.D. (17 Disciplines) (Total no. of seats 110, Reserved for SC- 17, for ST-8).

Agricultural Chemicals, Agricultural Economics, Agricultural Engineering, Agricultural Extension, Agricultural Physics, Agricultural Statistics, Agronomy, Biochemistry, Entomology, Genetics, Horticulture, Microbiology, Molecular Biology and Biotechnology, Mycology, and Plant Pathology, Nematology, Plant Physiology, Soil Science and Agricultural Chemistry.

APPLICATION FORM AND INFORMATION BULLETIN CONTAINING DETAILED INFORMATION WITH REGARD TO ELIGIBILITY MAY BE OBTAINED WITH EFFECT FROM JUNE 1, 1992, ON PAYMENT OF Rs.50 IN CASH AT THE CASH COUNTER IN ROOM NO.47, DIRECTOR'S OFFICE, IARI OR IF DESIRED BY POST BY SENDING A DEMAND DRAFT/PAY ORDER FOR Rs.55 (Rs.60 IF REQUIRED BY REGISTERED POST) DRAWN IN FAVOUR OF THE REGISTRAR (ACADEMIC), POSTGRADUATE SCHOOL, INDIAN AGRICULTURAL RESEARCH INSTITUTE, NEW DELHI-110012. The Institute shall not be responsible for non-receipt or late receipt of application form for any reason including loss/delay in postal transit.

Last date for issue of application forms:

i) At IARI Counter : 30-06-1992.

ii) By Post : 25-06-1992.

While asking for Information Bulletin, Postal address should be mentioned clearly in BLOCK LETTERS and also whether it is required for admission to M.Sc. or Ph.D. degree course.

LAST DATE FOR RECEIPT OF APPLICATION : JUNE 30, 1992

NOTE : Please consult the Information Bulletin for Qualifications required for admission to various disciplines. A candidate can apply for admission to one discipline only.

ANNAMALAI UNIVERSITY

DIRECTORATE OF DISTANCE EDUCATION

ADMISSION NOTIFICATION FOR PG COURSES FOR THE YEAR 1992-93

Telephone : 04144-2610 (Chidambaram)
Telex : 4602 202 DDEC IN
Fax : 04144-2987

The Directorate offers the following courses of study under the Open University System. Admission is open to persons all over India.

POSTGRADUATE COURSES:

Duration : **Two Year**

1. M.A. History (English & Tamil Medium)
2. M.A. Economics (English & Tamil Medium)
3. M.A. Sociology (English Medium only)
4. M.A. English
5. M.A. Public Administration (English Medium)

Eligibility : NO FORMAL EDUCATIONAL QUALIFICATION IS REQUIRED. To be eligible for admission to these courses one must have completed 25 years of age on 1.6.1992 i.e. they should have been born on or before 1.6.67.

The cost of application form and prospectus for each course is Rs. 25/- Applications will be sent to all by registered post.

APPLICATION FORM AND PROSPECTUS CAN BE HAD FROM THE DIRECTOR, DIRECTORATE OF DISTANCE EDUCATION, ANNAMALAI UNIVERSITY, ANNAMALAINAGAR-608 002 by sending a requisition along with a crossed Demand Draft for Rs. 25 drawn in favour of the **REGISTRAR, ANNAMALAI UNIVERSITY,** on any bank at **ANNAMALAINAGAR/CHIDAMBARAM,** mentioning clearly the name of the course for which the application form is required and a self-addressed unstamped cover of size 25 cm x 12 cm. The requisition alongwith the Demand Draft for Rs. 25 should be sent to the Special Officer, Open University System, Directorate of Distance Education, Annamalai University, Annamalainagar-608002. Cheques, Postal Orders, Money Orders and Out Station Demand Drafts are **not accepted.** Demand Draft should be purchased on or after **25-05-1992.**

Application for all courses will be issued upto **28-07-1992.**

The last date for receipt of filled-in applications is **31-07-1992.**

Applications can be had from the following Study Centres also on payment of Rs. 25/- by Demand Draft drawn in favour of the REGISTRAR, ANNAMALAI UNIVERSITY, as instructed above.

1. MADRAS : 19, Marshals Road, Egmore,
   Madras - 600 008
   (Phone Nos. 861590/861909)
2. TIRUCHI : 32-B, 7th Cross, Thillai Nagar,
   Tiruchi -620 018.
3. SALEM : 15, Dr. Subbarayan Street, Salem - 636 001
   (Near Palace Theatre)
4. NAGERCOIL : 70, Ammasi Madam Street (Near T.T.C. Bus-stand) Meenakshipuram, Negercoil - 629 001
   (Phone No. 3561)
5. VELLORE : 4, Thiagarajapuram, Vellore - 632 001
   (Near Lakshmi Theatre) (Phone No. 27647)
6. MADURAI : 176, North Veli Street, Madurai - 625 001.
7. COIMBATORE : 72, Sarojini Street, Ram Nagar,
   Coimbatore-641 009.
8. NEW DELHI : 47, (SFS) Basant Enclave, New Delhi - 110 057
   (Phone No. 6875567)
9. ANNAMALAI- DDE Building, Annamalai University,
   NAGAR: Annamalainagar - 608 002.

All the study centres except Annamalainagar will remain closed on all Tuesdays, Second Mondays and all other public holidays.

SPOT ADMISSION :

Spot selection for admission to the above courses will be made through all our Study Centres from 01-06-1992 if the applicants submit, along with their applications the necessary original certificates, Demand Draft for prescribed fee and two copies of their stamp size photographs. The spot selection is provisional and subject to confirmation by the Director.

Those desirous of getting application forms by post should apply to the Directorate only and not to the Study Centres.

Filled-in applications should be sent only to the **Special Officer, Open University System, Directorate of Distance Education, Annamalai University, Annamalainagar, Tamil Nadu, Pin Code 608 002.** IN NO CASE FILLED-IN APPLICATIONS SHOULD BE SENT TO THE STUDY CENTRES.

Applications and Prospectus can be had from the Directorate of Distance Education, Annamalai University, Annamalainagar and the Study Centres from **01-06-1992.**

REIMBURSEMENT OF NON-REFUNDABLE FEE FOR SC/ST STUDENTS :

As per the G.O. MS. No. 2040 dt. 20.10.1989 of the Government of Tamil Nadu, SC/ST students pursuing Correspondence Courses are eligible for reimbursement of the non-refundable fees..

CAUTION

SOME PRIVATE INSTITUTES/INDIVIDUALS POSING AS OUR AGENTS ARE ALLEGEDLY COLLECTING FEES, ISSUING APPLICATION FORMS AND PROMISING ADMISSION TO OUR COURSES. THE DIRECTORATE HAS NO SUCH AGENTS AND TAKES NO RESPONSIBILITY FOR THEIR ACTIONS. CANDIDATES ARE THEREFORE ADVISED TO CORRESPOND DIRECTLY WITH THE **DIRECTORATE ONLY.**

CANDIDATES ARE WARNED NOT TO BECOME VICTIMS OF CHEATING AND EXPLOITATION BY BOGUS CLAIMANTS IN THIS REGARD.

APPLICANTS ARE ADVISED TO WRITE TO THE DIRECTORATE INDIVIDUALLY FOR APPLICATION FORMS AND ADMISSION. APPLICATIONS FOR ADMISSION RECEIVED THROUGH TUTORIALS OR ANY OTHER AGENCY WILL BE SUMMARILY REJECTED.

Admission cannot be claimed as a matter of right and the Directorate reserves to itself the right of admission.

Dr. K. AYYAKKANNU
DIRECTOR

No. A1/7/92-93
Place : Annamalainagar
DATE : 18-05-1992

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BANGALORE 560 012

Advt. No. R(IA) 308-13/92

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Experience relaxable in case of exceptionally qualified candidates.

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Essential Qualifications: A Bachelor's degree in Engineering or a Master's degree in Science/ Arts/Commerce and at least II Class Master's degree in Hindi with good academic record and sound knowledge of English OR an equivalent examination in Hindi with minimum 3 years teaching experience of Prabodh, Praveen and Pragya courses of Government of India and experience of terminological and lexicographical work involving use of Hindi. A pass in the translation course, English to Hindi and vice-versa of Central Translation Bureau, G O I with 3 year's experience in drafting, editing and translation of scientific and technical publications/ documents from English to Hindi and vice-versa with ability to make draft notes for presentation and discussion in English and Hindi. **Desirable:** Knowledge of Kannada or other Indian Languages. **Job Description:** To organise and be in charge of Hindi Cell and publication of quarterly bulletin of the Institute in Hindi, English and Kannada; teaching of Prabodh, Praveen and Pragya courses; translation of Institute's correspondence and scientific/technical literature into English and Hindi; implementation of G O I Official Language Act, editing and drafting of scientific, technical and general publications and preparation of notes for presentation and discussions.

Details and prescribed application forms can be obtained from the Registrar on request (separately for each post) accompanied by an IPO for Rs. 10/- (free of cost to SC/ST on production of Caste Certificate from a competent authority) drawn in favour of Registrar along with a self addressed stamped (Rs. 2.00) envelope of the size 28 x 18 cms. **on or before 22nd June, 1992.**

Dated: 26th May, 1992.

REGISTRAR

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University News

MONDAY, JUNE 15, 1992

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Mysore Varsity Convocation

Dr. Manmohan Singh, Union Finance Minister, arriving in a procession to deliver the convocation address at the University of Mysore. He is followed by Dr. M. Madaiah, Vice-Chancellor, Shri M. Veerappa Moily, State Education Minister & Pro-Chancellor, Prof. M. Shivalingaiah, Principal, Maharaja's College, Mysore and Shri Khurshid Alam Khan, Governor of Karnataka & Chancellor of the University.

BARKATULLAH UNIVERSITY, BHOPAL

Dated : 2/6/92

No. 168/BU/Dev./Admission/92

Admission Notice – 1992-93

Applications for admission to various University Teaching Departments are invited in the prescribed forms obtainable from the concerned departments, on payment of Rs.30/- each at the counter and Rs. 40/- by post, payable by Postal Order/Bank Draft drawn in favour of Registrar, Barkatullah University, Bhopal.-462 026.

	Name of the course	No. of Seats	Minimum Qualifications
1.	M.Sc. COURSES		
i.	Bio-Science	10 each	B.Sc. with any combination of Life- Science subjects for (i), (ii), (iii) & (iv)
ii.	Microbiology		
iii.	Genetics		
iv.	Limnology		
v.	Applied Geology	15 seats	B.Sc. with Geology and any two of the following subjects Physics, Maths, Statistics, Chemistry, Zoology or Botany.
vi.	M.Sc. Tech Remote Sensing	05 seats	M.Sc. in pure Geology/Applied Geology. M.Sc. Tech../ M.Tech. with 55% marks.
vii.	Physics (Specialisation Materials science/Digital electronics/fibre optics/ super-conductivity).	25 seats	B.Sc. with Physics.
	ELIGIBILITY CONDITION FOR ADMISSION IN ALL M.SC. COURSES : ATLEAST 50% MARKS IN THEORY PAPERS IN ALL THE THREE YEARS OF B.SC.		
2.	MA/M.COM COURSES		
i.	Economics(Specialisation in Regional Planning & Economic Growth)	30 seats	Eligibility for admission to all courses of MA/M.Com: Degree examination with atleast 50% in aggregate:
ii.	Sociology	20 seats	- do -
iii.	M.Com.	20 seats	- do -
iv.	Persian	10 seats	- do -
v.	Arabic	15 seats	- do -
vi.	Psychology	15 seats	- do -
vii.	Sanskrit	15 seats	- do -
iii.	Linguistics	10 seats	Eligibility for admission to M.A. Linguistics : Degree examination with atleast 50% in aggregate.
3.	M.PHIL COURSES		
i.	Bio-Science (Specialisation in Inland Fisheries/Endocrionology/ Animal Physicology/Bio-Chemistry)	10 seats	M.Sc. in any branch of Life Science preferably in Bio-Sciences with specialisation in branch of the course.
ii.	Physics	10 seats	M.Sc. Physics
iii.	Regional Planning & Economic Growth	25 seats	M.A. in Economics (15 seats/Geography (10 seats).
iv.	Sociology	20 seats	M.A. in Sociology/Social Anthropology.
v.	Psychology	10 seats	M.A. in Psychology
vi.	Comparative Linguistics	15 seats	M.A in any language with linguistics as a paper.
	ELIGIBILITY FOR ALL M.PHIL COURSES : ATLEAST 50% MARKS IN ALL THE EXAMINATIONS FROM BA/B.SC/M.A./M.SC. EXAMS.		
IV.	LLM (Modern Legal Studies	15 seats	LL B with atleast 50% marks.
V.	Diploma/Certificate Courses		
1.	P.G.Diploma in Tribal languages	15 seats	P.G. in any language with linguistics as a paper.
2.	P.G. Diploma in Labour Laws and Industrial Relations	50 seats	LLB/M.COM/MA in any social science subject with atleast 55% marks
3.	Post B.Sc Diploma in Computer Applications (25 English/10 Hindi)	35 seats	Eligibility : B.Sc/B.Com/BA (Maths), M.Sc/M.Com/MA (Maths), B.E. with atleast 55% in Graduation or P.G.
4.	Certificate course in Spoken Persian	10 seats	Higher Secondary with atleast 45% marks.

15% of SEATS are reserved for scheduled caste and 18% for Scheduled Tribe candidates in each course,. with 5% relaxation in marks. If such candidates are not available, the seats will be filled up from general candidates.

Only whole time students are admitted to Post-Graduate and M.Phil courses. Applicants desirous of applying for more than one course, have to apply separately for each course. Application form accompanied by attested copies of certificates are to be submitted to the respective Heads of the Teaching Departments by 1st July, 1992 or within 10 days of the declaration of the result of the qualifying examination of the Barkatullah University.

Admission to M.Phil courses and Post B.Sc. Diploma in Computer Applications will be made through written test, the dates of which will be notified by the respective Heads of the departments.

Dr. Kamlakar Singh
DEPUTY REGISTRAR (DEV.)

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Editor :
SUTINDER SINGH

Democratisation of Education Through Scholarships

K. Venkata Reddy*

The Indian Constitution and the proclamation of India as a democratic socialist state, place the case for a widespread network of scholarships beyond dispute. The question, therefore, is not : why scholarships? It is : how, when, where and for whom scholarships?

The underlying principle in the allocation of scholarships to groups an individuals is the principle of democratization. Scholarships have to be awarded to the poor, irrespective of talent. A nation cannot survive part-slave, part-free. There is also clearly a case for a steady stream of scholarships to backward classes and weaker sections who have to catch up with more advanced classes and communities.

Nevertheless, the concept of democratization through scholarships is not completely met by the regular award of scholarships to backward classes and other weaker sections of society. The true democratization of education through scholarships is based upon a principle of equity. Equity demands that scholarships are awarded only to those who, for want of opportunity, are not able to do justice to their proven potentialities to serve their country.

There are, at least, two points of view on when and to whom scholarships should be given. The old liberal conception was of a scholarship as aid to anyone of outstanding talent in a particular field, irrespective of whether or not that field served an immediate purpose in national planning. Academic merit was a sufficient reason for a scholarship.

There is, however, another, and at present strongly urged view, that scholarships cannot be given indiscriminately for academic merit, but must be streamlined to a national educational-cum-economic plan. This need not always be at conflict with liberal practice, for no technology is possible without fundamental research, and liberal scholarships encourage fundamental research.

Scholarships, like other assets, require to be allocated to subject-fields that, at a particular point in our history, have greater relevance in employment than other subject-fields. There are today more scholarships, internal and external, for technology than for philosophy, for science than for sociology, for medicine than for the humanities. Right or wrong, this emphasis is likely to continue because India happens, at this moment, to need for her plans more engineers than teachers of literature and social sciences.

Scholarships in India have so far tended to be operated on a rather experimental method in which there has necessarily been some waste. Highly trained scholars have sometimes returned to India to find that they have not been capable of being assimilated into the national economy. Consultation between departments of government with a view to coordinating needs with scholarships is now happily on the increase, and we may look forward to a time when waste will be, for all practical purposes, eliminated. To this end, we can ask ourselves some educational questions like (i) Where

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**Professor of English, Sri Krishnadevaraya University, Anantapur-515003(AP)* is it necessary to award scholarships? (ii) For what period and for study to which country should scholarships be awarded?

The first is not a geographical question. It is a question of subject-fields and specialised sections of subject-fields. When the facilities for postgraduate studies or practical training already exist in India that are comparable with facilities in other parts of the world, foreign scholarships are neither necessary nor desirable. Scholarships are vital and must be established in numbers adequate to those we require to educate.

Where shall we send Indian scholars and for what, is the problem which has largely been solved for us by the large number of scholarships offers which educationally and industrially advanced foreign governments and organizations have made available to India. There is, indeed, the danger that where a large number of scholarships is offered by particular countries in specific fields, we will jump at them indiscriminately and without stopping to consider whether the scholarships can be put to a precise use when the scholars return to this country. We need to examine carefully all schemes that are offered to us, so that we can estimate, on the educational information available, whether the country offering them has facilities not merely incomparably better than our own, but immediately adopted to equip our scholars, after training, for work in Indian conditions. This applies particularly to facilities for research and for practical training, and less to facilities for teacher training.

For how long should a scholarship be tenable is another question. Where a scholar is potentially good material, he should be sent out of India comparatively young, between twenty and twenty-two. He should go for a substantial period, at least for three years. He should not be allowed to move in quick succession from one foreign country to another but should be required to return to India to work for a period of five years before he is eligible for another scholarship abroad. When a scholar is over twenty-five and under thirty-five, it is important to consider him for a shorter period of training which is for one year and to see to it that he gets his postgraduate studies or specialized training in a field in which he can benefit from it at that stage of his professional development.

Scholarships are educationally good but the abundance of scholarships that now confront the enterprising and ambitious Indian student are also likely to become a liability if they are taken too much for granted. There are several young men, well set up and comparatively of comfortable means; there are many parents who can afford to send their children abroad; but, now that there are so many scholarhsips available, these rich students don't see why they shouldn't get one. There may be something to be said for this attitude if the rich young man is willing to take his chance in open competition with the poor young man. Unfortunately, this is not always so. The danger, however, lies in the attitude towards which this type of thinking tends, namely that scholarships are a fundamental right to which all Indian nationals are entitled. Paradoxically enough, students from affluent urban societies knock away a larger number of scholarships than students from poor rural communities.

Since scholarships are not a fundamental or other right, they must be earned either by sheer poverty or by extraordinary hard work. But to put them too easily within the reach of young men and women irrespective of their real economic and social status is to emasculate and not to educate. It is to set a premium on educational complacency and to destroy scholarly initiative. A scholarship is a recognition of one's economic poverty or ability and industry that unless given, that "little push forward" may decay or stand arrested drying up those slender sources of human talent to the discovery of which educationists all over the world have pledged themselves.

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Managing Academic Institutions

A Strategic Perspective

M.Senthil Kumar*

Society in this century has become a society of organisations says Peter.F.Drucker. The organisations—whether profit oriented or non-profit oriented—have been designed and established to serve the society as a whole. Academic Institutions form an important and major segment of the organisations contributing to the economic, technological, human resource and cultural development of the society. The phenomenal and decisive role played by the academic institutions stresses the need for effective and efficient management of them.

In the recent years, various concepts and techniques have been evolved for the better management of organisations. They have been absorbed and practised by industrial and business organisations successfully. But unfortunately these practices have not made inroads to academic institutions for many reasons.

There is a general perception that the task of managing academic institution is easier and does not call for special management techniques and practices. It is also assumed that a good administration with a set of rules and regulations is quite sufficient for managing academic institutions. These views are based on a few assumptions like the following :

1. Academic institutions are not required to achieve the monetary goals like revenue and profit;

2. Academic institutions do not face any threat from competition; and

3. Academic institutions are more stable and not affected by economic, political and social changes.

A close look at functioning and the environment of academic institutions would readily disprove the above assumptions and stress the need for a new thinking on academic institutions. It is true that academic institutions do not face the problems related to achieving profits and revenue. But what about the complexities involved in achieving primary social goals? The primary objective of academic institutions is to provide educational and other allied social services to the society. So the critical question is, how far they are efficient and effective in providing these services? Any academic institution should prove itself in terms of quality of service and its social contribution to the society. An institution shall face many problems in achieving the primary and desired objectives.

On the other hand, academic institutions are exposed to competitive environment also. Even though there is no direct threat from competition, academic institutions feel competitive pressure indirectly. Institutions in the same field compete to receive funds from sponsoring agencies and government for their new courses and research projects. The allocation of funds for the proposals are mainly based on past performance and achievement of the institutions.

Similarly, consumer choice of an institution is determined by the quality of service, performance and reputation of that Institution. So unless an institution prepares itself and performs better, it cannot grow over time. Moreover academic institutions are not so stable as they are perceived to be. Like business organisations, academic institutions also get disturbed by economic, political and cultural changes and prevailing social tensions. For example an institution shall face problems because of students' unrest, trade unionism and politicking inside the campus.

So a professional strategic management approach to planning, organising and controlling is essential for any academic institution to combat the challenges and problems arising out of changing environment.

Strategic Management

The word "strategy" found its place in the literature and practice of management only in recent years. 'Strategy' is the pivotal and unique core of strategic management process. Strategic management is of very serious and major concern to top management of organisations. According to George Steiner, strategic management is the process of "formulating and forging organisational missions and purposes, setting objectives for the organisation in light of external and internal environmental focus, formulating specific policies and programs to achieve objectives and assuring their proper implementation".

**Faculty Member, Deptt. of Management Studies, Regional Engg. College, Tiruchirapalli-620015.*

Situation Audit

The main objective of situation audit is to analyse the important factors and elements that may have a significant impact on the formulation of mission, objectives and action programs. Situation audit also provides a platform for sharing different views about changes in internal and external environment of the organisation. The information collected through the situation audit will provide a base for formulating the missions and objectives. A brief explanation of the contents of situation audit process follows :

1. The institution must gather and analyse the information on the attitudes, demands and expectations of the external individuals and organisations. Some of the important external constituents of the academic institution are government agencies, industries, R&D institutions, ministry of education, and related institutions.
2. Top management of an academic institution must understand the values, attitudes and interests of its internal participants – teachers, students, managers and other employees. The value system of employees is very important element to be considered for any planning approach.
3. Another important dimension in the situation audit is data analysis. The academic institution should maintain a good data-base, which would be very helpful in shaping the policies and strategies. The database might cover matters such as alumni, statistical information on students & employees, departmental/course details, research projects completed/ongoing, companies visiting for placement, cost of different operations, financial status and so on.
4. Finally, the SWOT analysis (Strength/weakness and opportunities/threats) which is a critical phase of the situation audit.

An academic institution may examine the strengths/weaknesses of its internal environment on following lines:

* Attitude and morale of teachers and other employees
* Attitude and quality of students
* Cost of operations
* Physical facilities
* Revenue/resource position
* Organisational Structure

Similarly, the opportunities/threats from the external environment shall be identified by an institution. A few opportunity/threat elements have been listed below.

* Science and technological developments
* Industrial development
* Social conditions
* Economic conditions
* Govt. regulations
* Budget constraints

A detailed and systematic SWOT analysis would result in better and realistic strategic planning.

Mission Formulation

"A mission statement explains an organisation's philosophy of existence, sets forth its values and social goals and addresses the development of its employees".

What should be the nature of mission statement for an academic institution? Can it be expressed in specific and concrete terms? The nature and objectivity of mission statement are determined by the values, attitudes and desires of top management (Head of the institution, Board of Governors). However the basic and important contents of the mission statement of an academic institution shall explain the very social purposes of its existence and the kinds of service goals to be pursued (activities, social benefits – courses/programs). It may reflect the distinctive culture of the institution and states the common values to be shared by the employees. It should highlight an institution's commitment and responsibility towards the societal development.

Moreover, the mission statement of an institution should address the growth and development opportunities of students, teachers and other employees.

Setting Objectives

Objectives are the desired results to be attained within a specific time frame. Objectives also become a set of standards for measuring performance of the organisation.

In profit oriented business corporations, the objectives are framed in terms of market share, ROI, sales, profits and stated in specific numbers and percentages.

In academic institutions the objective formulation is a complex process for most of the results are intangible and unmeasurable. Yet, the institutions must formulate a set of qualitative and quantitative objectives. For example, the objectives may be expressed in terms of the following :

* Number of students to be trained
* Number of project works/field works to be undertaken by the staff and students
* Research areas
* No. of research projects in Hi-tech/social/economic importance areas

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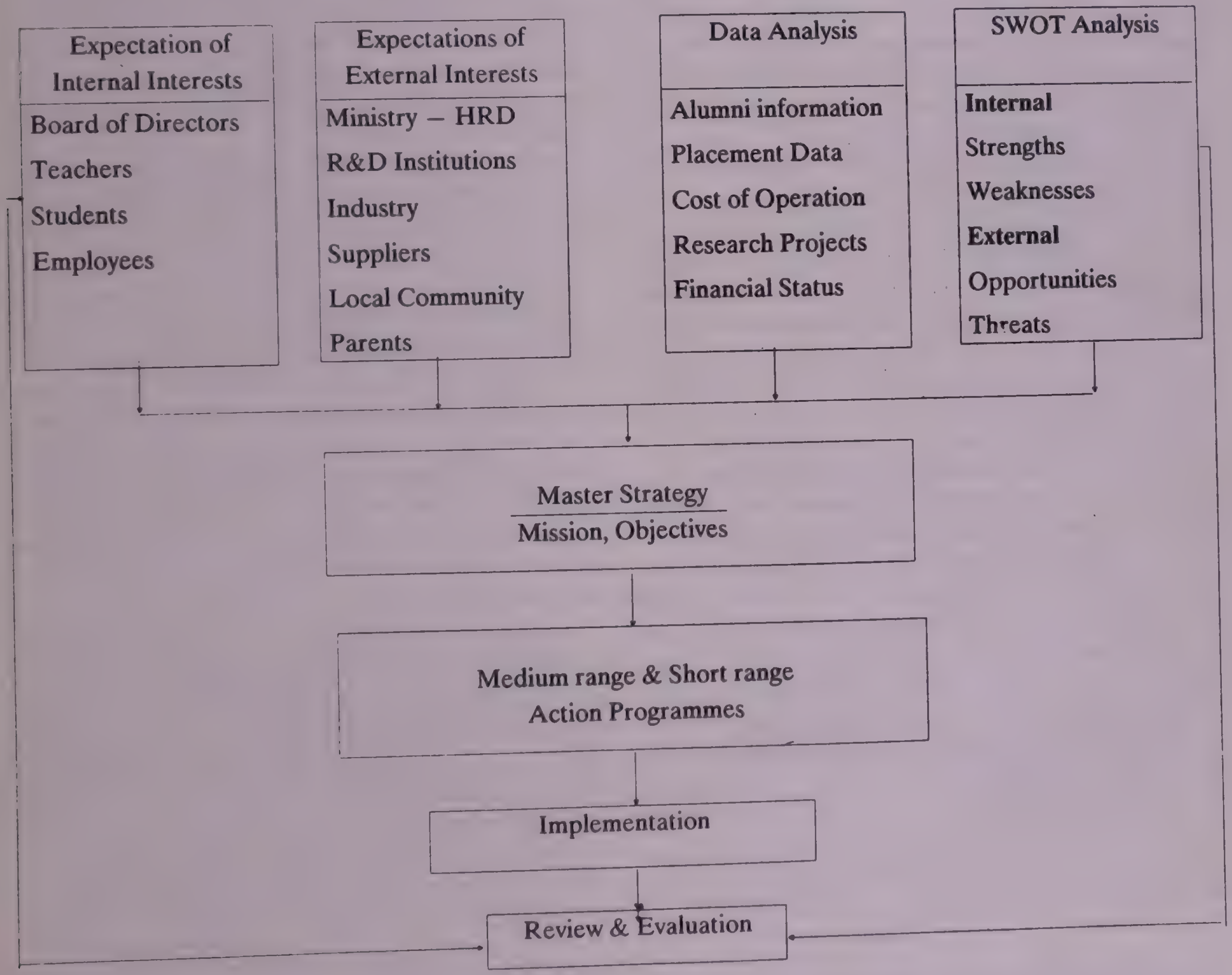
- Placement to be achieved
- Consultancy assignment by staff members
- Number of Industry-Institute cooperation programs
- Revenue to be generated
- Training & development of teachers and other employees.

Implementation

The strategy must be translated into a set of short range and medium range action programs. The organisational structure which will facilitate the implementation of the strategy must be determined. The policies and procedures which would help implement strategies must be evolved and encouraged. The resources (physical and human) required to accomplish strategic goals must be assured and made available to the units and subsystems of the institution. Top management must encourage the participation of all employees right from the formulation to the implementation of objectives. The institution must evolve proper incentives and control systems to ensure motivation and coordination of individuals and groups.

Strategic management is a continuous process which involves thorough evaluation of policies/objectives at each stage of their evolution. It also provides a better performance review on the achievements and lags of the academic institutions over a time period and help the top management apply correctives. Better processed and professionally handled, strategic management would result in effective and efficient management of academic institutions.


Expectation of Internal Interests
Board of Directors
Teachers
Students
Employees
Expectations of External Interests
Ministry – HRD
R&D Institutions
Industry
Suppliers
Local Community
Parents
Data Analysis
Alumni information
Placement Data
Cost of Operation
Research Projects
Financial Status
SWOT Analysis
Internal
Strengths
Weaknesses
External
Opportunities
Threats
Master Strategy
Mission, Objectives
Medium range & Short range Action Programmes
Implementation
Review & Evaluation

Strategic Planning Model for Academic Institutions

(Adapted from *Management Policy & Strategy* by George A. Steiner et. al)

Organizational and Administrative Constraints of Quality Research in Education

R.P.Bhatnagar*

The quality of educational research done in India is, no doubt, very poor as is obvious from the review presented in the *Third Survey of Research in Education.* This paper discusses the organizational and administrative factors underlying this state of affairs and makes suggestions for the improvement of its quality.

Basically, it is the degenerative state of the human factor involved in educational research in different capacities at different levels that seems to be responsible for the poor quality of educational research in India. The characteristics of this degenerative state of the human factor are the breakdown of the ethical system in concerned people, and learning by them of undesirable values which have come into operation in a big way as a result of failure of relevant control centers, an aftermath of Indian independence. This is the tragedy of fate that has befallen this nation that more and more high offices and responsible positions in the country are slipping, due to political interference and scoietal pollution, into the net of people who are less competent lacking conceptual, technical and human skills. The number of such people has increased several times in the past two decades. These people have been raising strong barricades against the entry of the competent men into their fortress, a situation that has been demoralizing and alienating from quality research even the competent and the ethically strong persons. This trend may be seen characterizing constantly increasing power of pressure groups in all Indian universities. These formal and informal pressure groups have built up strong support systems for corrupt practices and constitute a potent threat to the ethical system of the university and the research organizations. People clinging to their old-valued morality and carrying the heavy load of their ethical values on their shoulders are cripplingly grumbling in the polluted organizational climate all around. When the environmental context is such, it is difficult even to think of improving the quality of research in education until and unless the organizational structuring and functioning and administrative control are effectively achieved.

Existing organizational and administrative constraints adversely affect the psychology of the researcher. Almost all educational research in India is guided by extrinsic motivation reflected in the desire for getting promotion, appointment or desire for status and prestige. In case of appointments and promotions a Ph.D. degree was given a certain definite weightage. A few years back a Ph.D. degree was rather made an essential qualification for appointment as a lecturer. A non-Ph.D. could be appointed but he was required to obtain a Ph.D. degree within five years of his appointment. Even where it was not an essential qualification at certain places or during certain period preference was given to it in appointments. These constraints forced a large number of candidates to go for Ph.D. level research even though they had no aptitude for it and were not competent enough to conduct research. Thus, in a way a Ph.D. degree right from the very beginning had been made an artifact of socio-cultural environment. The candidates undertook research under pressure, this being a task imposed on them in which most of them did not have genuine or intrinsic interest and natural curiosity which, generally, enable a person to work seriously with sincerity and devotion. Hence, most researchers were not committed to genuine research. Their interest was confined to only getting a degree somehow. It would matter little for them whether the research done was valid or not. The quality of research was not at all their consideration. Obtaining the degree was the "summum bonum" of their research, the beginning and the end of it all.

Another organizational and administrative constraint relates to the admission criterion for Ph.D. The universities and other organizations had no scientific method of screening the candidates for Ph.D. A second class postgraduate degree was, generally, considered sufficient qualification. The competence in research methods and techniques of research were not taken into consideration. At certain places a system of interviewing the prospective Ph.D. candidates by the members of research degree committee was introduced. But, for various administrative and organizatinonal reasons it did not work or remained ineffective. This resulted into many Ph.D. level researches which may be said to be spurious, weak in designing and inappropriate for achieving worthwhile goals.

**Retd. Professor and Head, Deptt. of Education; and Dean of the Faculty of Education, Merrut University, Merrut, U.P.*

In some universities Ph.D. research is allowed to be conducted even at the graduate departments under the supervision of lecturers teaching only graduate classes for political reasons as the Vice-Chancellors are not able to resist the pressure of these students and the teachers. In these graduate colleges neither there are good library facilities needed for research nor there are competent research guides. Under such orgaizational and administrative constraints how can there be a quality research? Small wonder that under such constraints the candidates are forced only to adopt undesirable tricks and scandalous ways of doing research. The Vice-Chancellors are aware of these sub-standard conditions, but they are helpless.

The organizational structure and functioning of the university are such as there is no built-in system therein which can identify persons who are competent to guide research. The existing ordinances lay down only degree and paper qualifications which have already lost their validity with the result that there are found in the universities and colleges very few research guides who are competent. They have little interest in genuine and valid research. The number of such research guides is increasing in geometric progression. Many of these research guides even lack needed standards of ethical behaviour. They themselves prepare the synopses, get them approved and write out the theses of the candidates and for that they charge fees in thousands of rupees. Qualitative improvement of research in this organizational situation can only be a dream.

Fair and valid evaluation of Ph.D. research is another casualty caused by organizational constraints of the universities and colleges. No thesis, however poor, is rejected. Such is a trend that has developed in the recent past; and such is the organizational dynamics of the university as everyone feels helpless in this regard. Everyone grumbles, but nobody can do anything. The candidates and their supervisors manage, anyhow, to see that only those persons are appointed examiners who are close and friendly to them, who are known to be non-rejectors, non-serious, listless and blind to the quality of research. The number of such examiners is increasing fast as the conscientious and idealist ones are losing ground and are being ignored everywhere. In turn they also reshape themselves and fall in the line with other normless examiners. The result is that any person may write anything, get it typed out and submitted and he gets the degree. In such an organisational context, how can any person think of working for quality research in education. As a consequence of this, the researchers are found adopting highly undesirable practices such as copying verbatim from the theses, not collecting genuine data and cooking results, submitting incomplete thesis without data of any kind, not caring to write correct language, correct references and full bibliography, not caring to conform to standards and norms of thesis-writing, and so on.

All that is said so far is about research done in the universities and colleges. A significant part of the total research is conducted in the form of institutional or individual projects supported financially by organizations like the UGC, NCERT and ICSSR, etc. This part of educational research is in no way better than the university level Ph.D. research. In many cases reports of these projects are found just slight alterations of the Ph.D. theses of these candidates and are awfully bad, full of technical errors and mistakes pertaining to language and expression.

Although under these administrative and orgnaizational constraints it is difficult to find out ways and means of improving the quality of research, a few suggestions are made as follows :

(1) Criteria of admission to Ph.D. research should be made more stringent by the university. Emphasis should be more on conceptual knowledge and technical skills pertaining to research methodology, interest in and aptitude for research rather than on paper qualifications and degrees. These can be judged through a short objective type test combined with interviews by the members of the research degree committee (RDC) backed up by university administration to obviate the effect of various kinds of pressures.

(2) Even the test and the interviews may be faked and misused by the research degree committees if they so decide. There comes the role of the Vice-Chancellor which he can play more effectively by way of constituting the RDC very carefully and also by way of being present in its meetings and directing the proceedings tactfully.

(3) For the above reason the Vice-Chancellors will have to be appointed from amongst the academicians and well-known researchers who can give academic leadership to the universities. This is the greatest orgnaizational constraint at the moment as it is at this stage that the sordid political interference is unsurmountable, releasing psychological forces and processes which underlie all kinds of vices and corruption in the temples of learning.

(4) Since the university research degree committees have failed to control the quality of research in education, it may perhaps, be a better alternative to have a state level research board having representatives of all state universities and experts from outside centers of excellence.

(Contd. on page 12)

Citizenship Development with Special Emphasis on Value Education

J. N. Sharma *

It is apparent that there has been a threat to the identity of the Indian culture from the West. There has been an invasion of Western School of Thought on India—in dress, diet,literature—and the Indian mind has been going under the spell of the West. Growing concern over the erosion of essential values and an increasing cynicism in society has brought to focus the need of revival of Indian heritage. It is the only way to recultivate the social and moral values which are the pride of our ancient India.

Value Education also means fighting against forces of communalism, violence and fatalism. It stands for secular thought, reverence for elders and the Indian way of living. The target is to achieve the national goals of heritage and bringing home the idea of brotherhood. These are the observations of the National Policy on Education (1986). Even Sri Prakasa Committee constituted in 1959 recommended the need of having moral and spiritual values in the education system.

Thus, there is to-day, as never before, an upsurge in favour of national integration and adherence to certain national values through introduction of national curriculum and insistence on observing secular, aesthetic and moral values, inculcation of understanding of our composite culture, within rich diversity, protection of environment and observance of moral family norms.

The Citizenship Development Society (CDS) which is a non-political, non-sectarian and non-profit making body has taken up a very vital and difficult task of fostering good citizenship conduct. Realising the importance of teachers' role in the present day context, the Society has designed and is conducting Citizenship Development Programmes with special emphasis on Value Education for teachers in the country. In the last two years, the Society has arranged 25 workshops/orientation courses spread over 22 different States and over 1000 teachers have been trained. The Society has organised four seminars-cum-workshops on citizenship development with spaecial emphasis on value education for teacher educators and other key level persons from Teachers Training Colleges, faculty members of SCERTs and District Institutes of Educational Technology (DIETs) at regional level. The first regional seminar-cum-workshop for teacher educators was conducted during 1990 at the State Institute of Education, Chandigarh in collaboration with Directorate of Public Instruction, Chandigarh for the States of Punjab, Haryana, Himachal Pradesh, Union Territories of Delhi and Chandigarh. The second regional seminar was held at the Institute of Advance Study in Education at Madras during August, 1991 in collaboration with the Directorate of School Education at Madras for five Southern States, viz. Tamil Nadu, Andhra Pradesh, Karnataka, Kerala and Pondicherry. The third regional seminar was held at Banikanta College of Education, Guwahati in November, 1991 in collaboration with SCERT, Assam for the seven States of the north-eastern region. The fourth seminar in the series was held at Goa in collaboration with the Directorate of Education, Goa State during February, 1992 for the States of Maharashtra, Gujarat, Madhya Pradesh, Rajasthan and Goa. The Fifth and the last seminar in this series will be held in Calcutta in September, 1992 to cover the Eastern States.

The regional seminar-cum-workshop for teacher educators and other key level persons held at Goa was inaugrated by Shri Subhash Shirodkar, Minister for Education, Goa State. Dr. P.R.Dubhashi, Vice Chancellor, Goa University delivered the valedictory address.

Dr. Dubhashi in his valedictory address mentioned that India opted for elected democracy which is the largest democracy in the world, though USA is the richest democracy. Unfortunately, in India, there has been erosion of citizenship values through elections and further the voters are purchased in Indian elections though People's Representation Act prohibits this. Muscle power and money power are the main factors in Indian elections. A large number of criminals get elected in the elections. He explained several ills prevailing in the Indian democracy.

In a situation like this where democracy was degenerated, we must seriously think of an individual citizen who should take courage and make those in power realise that we cannot accept such a state of affairs. This is only possible through an effective process of education. Therefore, some reforms/orien-

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tation is required for teachers and values are the first to be infused in them. It is strongly felt that only motivated teachers can bring about such a change. India is a land of mystics. Each part of the country has produced very rich values and cultural traditions. He complimented CDS for having initiated a movement for fostering value education among the school teachers. Not only the teachers need to be oriented but parents also need similar education. We should attach inculcation of values in the society the highest importance so much so that not only in the school system such orientation needs to be taken up but at higher education level as well.

As an important consequence to the deliberations held in this seminar, we are led to think seriously the meaning and scope of the value-oriented education to formulate practical guidelines for Government action at all levels of education. Though this programme has been taken up at the school level, it is high time that the universities also start seriously thinking on this issue.

Considering the fact that teachers at all levels are destined to play a major role in the shaping of the future as also the fact that value-oriented education is indispensable, Citizenship Development Society recommends following programmes to be taken up both at school stage and in the institutes of higher education :

(1) Suitable literature, specially designed for value-oriented education should be produced.

(2) There should be foundation courses both at the secondary school stage and in the institutions of higher education.

(3) Special institutes like Ramakrishna Institute of Moral and Spiritual Education(which is affiliated to Mysore University)should be established.

(4) Special orientation programmes should be taken up by the State education departments and universities to train teachers for fostering value education.

(5) Government should take the help of non-government organisations and other voluntary societies and give them necessary support and incentives. Even parents should be involved in the programmes of value-oriented education.

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REGISTRAR

PILANI
June, 1992

True Meaning of Self Reliance

"Self-reliance should not mean self-defeating withdrawal and futile confrontation, it should mean thinking for oneself," said Dr. Manmohan Singh, Finance Minister of India, while delivering the Convocation Address at the seventy second annual convocation of the University of Mysore. "Stimulating the growth of production, removing the bias in favour of capital-intensity, giving a fairer deal to agriculture, making producers compete for rewards – these things are not foreign devilry but the true meaning of self-reliance", he added. Excerpts

What awaits you is not all roses. I would be surprised if most of you did not leave the University with a nostalgia for the past and a certain fear of the future. If it were in my power at this moment to grant you a gift, I would make you a present of self-confidence.

The world you will enter is a different one from the one I walked into when I graduated. There was one aspect of the world of my youth that I treasure, an aspect I would greatly like to see restored : that somehow the society in which I lived and worked was more united, more naturally, unselfconsciously Indian than the one that is emerging today.

That all-permeating Indianness is still strong. My principal civil servants, for instance, come from four corners of India. One comes from Tamil Nadu,another from Kerala, one from Punjab and another from Gujarat; and they have all served India in their own ways. The India in which I grew up, earned my livelihood, brought up my children – this India has meant much to me. I have regarded all of it as my home, and I could not have been at home anywhere else.

But in some important respects, that India is being questioned, challenged. My own home state is rent by strife over its Indianness, a strife that fills me with great sadness. Competitive politics has raised caste and communal tensions to a dangerous level in several parts of our country. There is more parochiality in the governments. Politics is ceasing to be a vehicle of purposeful social change. Even industry finds its cosmopolitan character under threat of erosion. This is what I find most disturbing, even more for you than for myself. You have the future of this country in your hands; I would urge you to work to restore its Indianness,its instinctive unity.

There is another important respect which requires urgent national attention. I refer to the visible signs of erosion of national self-confidence and to the need for strong corrective action.

The sense of confident nationhood was the most palpable characteristic of the era of my youth. Our leaders – Gandhiji, Nehru, Patel – had this confidence in great abundance; they had no dubts about the potential of this nation, or about its ability to look after itself. They were, in fact, allergic to dependence and its consequences – to sycophancy on the one hand and truculence on the other. The one thing they tried to impart to the country was self-confidence and self-respect. Their influence is still strong and their example would continue to inspire us to look the world in the face. But it must be admitted that of late there has been a weakening of this feeling of self-confidence. A feeling has grown that somehow we Indians are inferior to other nations, that we cannot compete against other countries in the global markets, that therefore we must build strong protective walls to insulate our economy from outside competition. I regard this feeling of lack of self-confidence a major barrier to the realization of India's immense development potential.

The leaders of our natinal struggle had faith in our nation, and the greatest homage we can pay them would be if we could restore the nation's belief in itself – not simply restore it, but revivify, rediscover, and redesign it. Let me illustrate what I mean by taking examples from the fields which I know well.

Take, for instance, the area of trade. Industrialists in this country are blessed with many advantages that other countries do not enjoy. Our wage costs are very low. Our food prices are generaly lower than elsewhere. We grow some of the world's best cotton at extremely competitive costs. Our raw materials, whether it is iron-ore or coal or bauxite or bamboo, are available at throwaway prices.

But even with these advantages, the idea of ur industry competing with industry abroad encounters resistance. Our import duties are amongst the highest in the world. We are trying to reduce them. We have reduced the peak duties to 110 percent in the last budget. With this, the duites on some products have fallen to the same level as the duties on their inputs. This appears to some of our industrialists as un-reasonable. They argue that their products must bear a duty that is at least 20 percent higher than the duty on their components and raw materials. But if they made full use of the cheap labour and raw materials available in this country, it is not they but their competitors abroad that should need protection.

Excessive protection of industry and import substitution regardless of cost have created a pattern of industrialization which generates few additional jobs. It has sheltered monopolies and accentuated disparities in income and wealth. Protection entails a subsidy given to the producer at the cost of the consumer. Heavy protection granted to industry has constituted massive discrimination against agriculture; no wonder that the disparities in living standards between rural and urban India have increased over time.

Industries and firms may be protected to correct inequalities in competition. If firms are new or small they may deserve protection until they can compete on equal terms. But they should not become permanent infants. It is important not to equate protection with patriotism and trade with sin. Glorification of autarky can do our country enormous harm. India has a fairly diversified natural resource endowment but it has to be recognized that a on a per capita basis we are not well endowed with natural resources. Thus India has to become a major international trading nation if its development potential is to be realized in full measure.

With our manpower, with our natural resources, we can capture considerable share of markets in the world. We can be the world' leading exporters of tropical goods, textiles, steel and engineering goods. With larger exports we can import materials from elsewhere and become competitive manufacturers of goods for which we do not have cheap inputs – electronic goods, chemicals, wooden and metal handicrafts. Export activity would generate production and employment in our own country. We would not need to send our workrs abroad to work under arduous conditions; they could make a gainful living in India itself. With a more dynamic economy, the graduates of our institutes of science and technology will not need to migrate to foreign lands in such large numbers. I cannot help feeling that our problems of poverty and unemployment would become much more tractable if we paid greater attention to the exploitation of the world market.

Trade also has political implications. Japan and Germany are major world powers today, not because of powerful armies or lethal weapons, but because of their trade with the world. As the world prospers, they will inevitably prosper; on the other hand, they are so important to the world that the world cannot let them go down. The world has a stake in a country in proportion to its internaitonal trade. Our share in world trade has declined from 3 per cent in 1950 to half a per cent today. The result is that the world's stake in our welfare and prosperity is minimal today.

Our country has been in serious economic trouble in the last two years. We havelooked for help from outside. Irrespective of their political colour, irrespective of their nationalist postures at home, finance ministers have travelled abroad in search of support. Yet they got very little. The reason is not that the world is unduly hardhearted towards us, but that our importance to the world has diminished. Our place in the world is not measured by the size of our population or our arsenal, but by the goods and services we export and import. India sits astride the busiest trade lanes of the world. All the sea and air traffic between the east and the west passes along its seaways and airways. But little of it orginates or ends in India. It is my hope that this trade will not simply pass us by, and that we shall take our rightful share of it.

But the world outside cannot be forced to take our goods and services; it must be coaxed to do so. We have to produce the goods the world wants, up to the quality standards that it demands, with the techniques it finds acceptable. This is where we need not only to have knowledge of the world, but to use it in ways it recognises. Our country has imported technologies on a considerable scale. We have sent thousands abroad to be trained. But if we want to learn at home how people work and produce abroad, it is also possible to do so by letting people from abroad come and show us; and one way to get a live demonstration is to invite them to set up enterprises in India.

The idea of foreign direct investment generates considerable heat in our country. It is evident that there are large corporations in world, and that they can play a role in the foreign policies of their home countries. One should not be unmindful of the possibility that their interests may conflict with our national interests. But their power should not be exaggerated; nor should our ability to protect our interests be belittled. The East India Company had acquired control of a large part of a east-west trade by means of a control of trade routes, ports, centres of production and markets. No multinational corporation of today comes close to acquiring that kind of control. Further, the Government today has more means and more knowledge to regulate the activities of foreign enterprises in the national interest. This is what independence means; this is what independence shoud be used for – not for cutting ourselves off from the global production system, but to interact with it for ur own benefit.

And worldwide, direct investment is not a monopoly of large transnational corporations; more often, it is small, knowledge- intensive firms that make the most difference. For instance, small Japanese firms driven out of production by rising wages have gone to Malaysia and made it the world's biggest exporter of rubber gloves. Italian shoemakers looking for new opportunities have provided the backbone of the highly successful Brazilian shoe exports. Mysore and its surroundings today produce some of the finest silks. The most expensive garment in the world is the Japanese silk kimono. Why should not Japanese patternmakers come and make kimonos out fo Mysore silk?

For trade, technology and investment are not the only things the world can give us; there is a world full of knowledge outside. There are books, journals that inform and educate; and with the advent of electronic communications, new means of knowldge are arising. The creation of knowledge is a global process involving universities, research institutes, industries and inventors.

We too can participate in this process with enormous benefit. For much of this knowledge is available at costs far lower than we would incur to produce it, and the value that can be produced by using that knowledge is a vast multiple of the cost of the knowledge. It is shortsighted to try import substitution in knowledge at whatever cost. It can do considerable harm to our technological dynamism. It can cut India off from the community of nations where knowledge grows in an ordered framework. The successful absorption, assimilation and adaptation of available knowledge is a critical aspect of development. It is a necessary precursor to the stage where we can courselves generate new knowledge. India needs a strong research and development base to emerge as a front-ranking nation in the world. We must spend more on research and development. Our scientists and technologists ought to be provided with facilities comparable to those available abroad. But R & D must have a proper focus. We ought to pay particular attention to areas which have hitherto been neglected, where we cannot depend on foreigners to generate new knowledge and where new knowledge can make a major contribution to the enhancement of India's development potential and the improvement of living conditions of our masses. I refer in particular to the need for stronger R & D efforts in the areas of agriculture, post-harvest technologies, rural development, primary health care, renewable sources of energy and control of environmental degradation.

So how are we to regain our self-confidence, to restore our self-reliance? Self-realiance should not mean self-defeating withdrawal and futile confrontation, it should mean thinking for oneself. An essential element in restoring the spirit of self- reliance must be to change the policy environment which gave sanctified withdrawal and glorified confrontation, and to open our country again to the winds of change. Self-confidence comes from practice, from successful adaptation to change; for adaptation, change has to be invited into our country.

This is what we have been engaged in doing in our recent policy initiatives. The intention behind the initiatives is not to betray our nation, nor to weaken its resolve for creative self-reliance. It is to broaden the arena for our productive forces, to bring the best out of them by raising the level of challenge, to make our resources more productive and to distribute the fruits of that productivity more equitably. Whatever the intentions of our policymakers, their ability to help the poor and the weak is fettered today by the generally low levels of incomes, the limited reach of the state and the absorption of its resources in less deserving uses. Stimulating the growth of production, removing the bias in favour of capital-intensity, giving a fairer deal to agriculture, making producers compete for rewards – these things are not foreign devilry but the true meaning of self-reliance.

Organisational and Administrative Constraints of Quality Research in Education

(Contd. from page 7)

This board, apart from performing all functions of RDCs should constantly keep an eye on the quality of research and should periodically suggest ways and means of improving the quality of research.

(5) Another organizational change which, probably, may contribute to the improvement of the quality of research in education may be to do away with the system of approved guides as it exists today in the universities. If the student has competence and research skills he should be able to come out with a piece of good research. Let the college and the university staff do their own independent research if they are really interested in it. At the moment the system of approved guides is doing more harm than good.

(6) Since the research methodology courses taught at postgraduate levels in many universities are not quite upto the mark and since what is there that too is not taught adequately for various reasons, short term courses, summer courses, vacation courses, workshops and seminars should be organized in a big way by central agencies like the UGC, NCERT, ICSSR, etc.

Such efforts and steps in these directions may, probably, minimize the adverse effect on the quality of educational research produced by the organizational and administrative constraints discussed earlier.

CAMPUS NEWS

State Councils of Higher Education

Inaugurating a seminar on "The role and functions of the State Council of Higher Education," the Andhra Pradesh Chief Minister Mr.N.Janardhan Reddy urged the newly formed council to do everything to improve the standards of higher education.

Mr. Janardhan Reddy recalled the note he had submitted to the then Prime Minister, Mrs. Indira Gandhi, in 1975, outlining the need to encourage students to engage themselves in some social service in a state other than their own for a period of two years before they seek admission to an institution of higher education. This would help broaden their vision and also help them appreciate the value of higher education.

The Chief Minister said that it was for the UGC to develop the council which should maintain liasion with the University Grants Commission. He added that higher education should be made purposeful and should play the role of a co-ordinator among different universities.

The Deputy Chairman of the State Planning Board, Mr. B.P.R.Vithal, in his presidential remarks, said that the situation in the institutions of higher education was deplorable. He said there was need to enforce discipline in higher educational institutions.

Referring to the new economic policy and its implications, Mr.Vithal said that the objective of higher institutions of learning was to produce NRIs till now, often described as "brain drain." The situation had changed now. The foreigners were investing in this country and as such they would be looking for better vocationally trained and skilled employees. This change must be taken note of as the necessary consequence of the new economic policy, he said.

Besides, education in liberal arts might be termed a "consumer good," while technical education might be called "investment good." Mr.Vithal also felt that higher education should become self-supporting. The cost of education should be borne by the investor who derives the benefit of trained manpower which was what privatisation meant, not absence of supervision by the State.

Regarding discipline in universities the UGC Chairman, Prof. G.Ram Reddy said a person who could successfully manage a conventional university, could manage just about anything. Referring to the assistance that the UGC could give to the councils of higher education, he disclosed that a decision was taken to help every council to the extent of Rs.1 crore.

Management School at IIT Kharagpur

A school of management of a standard comparable to the best in the world will start operating from July this year at the Indian Institute of Technology, Kharagpur. The school, which will offer a masters degree programme in management (an M.B.A. or M.Tech degree) is being set up with financial support from Mr. Vinod Gupta, a non-resident Indian, an alumunus of the Institute and the president of American Business Information in Omaha.

A Memorandum of Understanding (MoU) regarding the setting up of the school was recently signed between Prof. K.L. Chopra, Director, I.I.T. and Mr Gupta in the presence of the chief minister, Mr Jyoti Basu. According to Prof. Chopra, the school will provide management education and training to engineers desirous of higher education in the field of management through well-designed short and medium term executive development programmes.

The school will also provide training in entrepreneurship to engineers who want to set up their own manufacturing units apart from being engaged in sponsored research and industrial consultancy. Analysing the course content, Prof. Chopra said the school would have faculties in financial management, economics, accounting, marketing management, business policy, business law and personal management.

Mr Vinod Gupta has already deposited $ 2 million in the trust for the school and will contribute an additional amount for the next three years to meet the operational costs of the school.

Although the school will have administrative and financial autonomy, it will be under the overall academic and administrative control of the I.I.T.

Foundation Grants in Management

The Surrendra Paul Foundation

is reported to have made a grant of Rs 2 lakh in the form of two annual scholarships for MBA students at the Indian Institute of Management (IIM), Ahmedabad. In addition, there is a fellowship for the faculty development programme in the field of management.

According to the Apeejay-Surrendra Group a chair of Rs 12 lakh, named Surrendra Paul Memorial Chair in Systems, had been granted to the IIM, Bangalore. The most outstanding student of the Ist and 2nd year postgraduate programme of the IIM, Lucknow, would receive an annual scholarship of Rs 1 lakh from the Group .

Rs. 1 lakh has been granted to the National Institute of Training in Industrial Engineering. The Surrendra Paul Gold Medal will be awarded to the institute's most outstanding student in industrial engineering.

The Entrepreneur Development Institute in Ahmedabad has been granted Rs 1.5 lakh by way of sponsorship of a book on women entrepreneurs. A Chair of Indology along with Rs 12 lakh has been handed over to the Ramakrishna Mission Institute of Culture in Calcutta.

The Apeejay-Surrendra Group has also gifted 100 tubewels for a village water project and sponsored a 'bustee' school in Ballabhgarh. A vocational centre for 120 women, an adult literacy programme and a clinic for the area too have been sponsored by the Group.

Anna Varsity 'Do it yourself' Centre

Anna University proposes to set up an electronics centre where the students could fabricate electronic devices and dismantle others with the sole objective of learning. This was disclosed by the Vice-Chancellor, Prof. M. Anandakrishnan in Madras recently.

Prof. Anandakrishnan said the students would have the opportunity to do "reverse engineering" also – opening up the existing devices and fitting the parts back together. This would provide a better insight into the technology. Creating working equipment by utilising parts from existing broken down ones would also be possible.

The proposed centre will combine "hobby and work experience" to bridge the knowledge gap in electronic instrumentation and fabrication, for students in various branches, such as mechanical, electrical and even civil engineering.

Course on Office Work Efficiency

'Competnece and commitment of the person clubbed with awareness of professional obligations will ensure efficiency in any organisation,' said Dr. K. Jayashankar, Vice-Chancellor of the Kakatiya University while inaugurating the 10-day training course on 'University Office Work Efficiency' organised by the Training Centre for Non-Teaching Staff of Universities in India at the Kakatiya University recently.

Dr. Jayashankar said 'the efficiency of a system does not necessarily depend upon the physical facilities available but does necessarily depend upon the quality of people who work for the system'. In spite of shortcomings and bottlenecks inherent in every system, there are a few people in every organisation who still work without expecting any reward or returns, he said.

Dr. Jayashankar however felt that there should be a system of rewards and punishments in every organisation to encourage talent and discourage inefficiency. But unfortunately, it does not appear to be workable in the present-day situation, he added.

In his presidential address Prof. E.V. Sundaram, a senior faculty member in the department of chemistry, said that efficiency could be increased by automation. He stressed the need for sticking to the work schedule which in turn would ensure greater efficiency.

Women Entrepreneurs : Problems and Perspectives

Inaugurating a two-day seminar organised by the Department of Women's Studies, Alagappa University, for the Practicing Women Entrepreneurs in the Pasumpon District, Mr. S.V.N. Nagappan, President of the Karaikudi Chamber of Commerce and Industries, said "If the Government advanced at the start, those privileges which are given to small scale industries at a very later stage, it would have saved many small scale units from being wrecked". Mr. Nagappan pointed out that the high rate of interest, and interest demanded on interest by the financing banks, turn the small units into sick units even before the start and hence should be reasonably revised.

Ms. Qudisa Gandhi, District Collector, who delivered the valedictory address, said that life itself, for women, was an entrepreneurial venture as women had to meet various kinds of struggles in different phases of their life, and had to invent various strategies to tide over those problems. To become successful entrepreneurs, women needed formalised training, more knowledge of technology and realisation of their own potentials. She referred to different organisations now functioning in the District separately for promoting entrepreneurship and suggested that all organisations should, on a network basis, form an "Information Window" to make necessary information and guidelines available for the members who register themselves with the Window. She also said that Banks should not be hesitant about and suspicious of lending loans to unmarried single and destitute women. It was like compelling women to get married if they wanted to become entrepreneurs, she added.

Dr. Jayaraman, Director, Centre for Entrepreneurship Development, Madurai in his Special Address said that women confronted major problems in getting adequate working captital and marketing their product. Entreprenurship, he advocated, should be taught from school onwards and entrepreneurial camps should be organised in different parts of the State for young students during holidays.

Dr.B.Regina Papa, Director of the Department of Women's Studies pointed out that though women number 1029 per 1000 males in the total population of the District, they constitute only 10 percent of the total entrepreneurs. Even then, they mostly congregate in tiny ventures which are mere extensions of women's traditional roles. These units have low technology, run on minimum profit and with no diversification.

The participants were drawn from different business activities. Sessions were conducted on diversication of product, institutional support, management and marketing. The participants unanimously resolved that the Government should give atleast 50 per cent of orders to women entrepreneurs and the G.O.330 (May'90) stipulating that orders be given to Cooperatives on priority basis even without calling for tenders should be modified. The participants also requested that a branch of the SIDBI should be opened in the Pasumpon District.

They also felt that an incubation scheme should be formulated to help women in starting their units. This incubation scheme would provide enough infra-structural facilities and training to capable women till their fledgling units could be self-sustaining.

National Seminar on Analytical Techniques

A national seminar on 'Modern Trends in Analytical Techniques : Applications in Chemistry' was recently held at the Department of Chemistry, Gauhati University. The seminar was sponsored by the University Grants Commission and was cosponsored by Department of Science and Technology, Government of India, Council of Scientific and Industrial Research, New Delhi, Assam Science, Technology and Environment Council, Board for Prevention and Control of Water and Air Pollution, Assam, Oil India Limited and Gauhati University.

Inaugurating the seminar Dr.N.K.Choudhury, Vice Chancellor, stressed the need for training and research in the latest techniques of analysis as well as developing proper infrastructural facilities in the North Eastern Region for this purpose. Prof. K.V.Sane, Chairman of the Committee on Teaching of Chemistry, International Union of Pure and Applied Chemistry, in his keynote address, on "Improving Laboratory Teaching of Chemistry : Challenges and Opportunities", emphasized the urgent need to create an instrumentation culture in the country by involving both students and teachers on fabrication and maintenance of self-designed, low cost equipments. He dwelt at length on the success of the Locally Produced Low Cost Equipment Project at Delhi University.

During the seminar, several eminent analytical scientists delivered invited talks and the topics chosen were (i) Principles and Applications of Inductively Coupled Plasma Atomic Emission Spectrometry; (ii) Electrochemistry Techniques of Analysis; (iii) Kinetic Methods of Analysis; (iv) Trace Analysis of Natural, Biological and Industrial Samples; and (v) Thermal Analysis of Polymers. Besides, as many as 37 technical papers were presented in five technical sessions spread over the three days.

The recommendations made at the seminar suggest converting the Department of Chemistry, Gauhati University into the nodal department for study and research in chemical sciences for the region with introduction of new courses on analytical chemistry, biochemistry, forensic chemistry and polymer chemistry. Another recommendation calls upon the Department to introduce short duration, job-oriented training courses for science graduates.

Computer Applications in Library Services

The National Institute of Small Industry Extension Training (NISIET), will conduct a programme on Computer Applications in Library and Information Services during August 10-21, 1992. The objectives of the Programme are (i) to provide an understanding of the principles of computer operations; and (ii) to sue software packages on micro-computers.

The course contents include (1) Fundamentals of computers: (a) Introduction to computers, (b) Peripheral devices, (c) Programming Languages; (2) Operating systems, (a) Salient features of MSDOS, (b) Application of MSDOS; (3) Application Software : (a) Wordstar, (b) dBASE III plus,(c.) CDS/ISIS; (4) Library Applications : (a) Acquisition, (b) Serials control, (c) Cataloguing, (d) Bulletin preparation, (e) SDI service.

The programme is intended for librarians, information scientists, subject specialists responsible for providing services or managing library and information systems concerned with scientific, technical and industrial information.

Further details may be had from the Registrar, NISIET, Yousufguda, Hyderabad - 500 045.

Environmental Biologists Meet

The 13th Annual Session of the Academy of Environmental Biology will be held from 27-29, December, 1992 at Meerut College, Meerut (U.P.). During the session a Symposium on Toxicology, Conservation & Biodiversity is also planned. The symposium will not only bring experts at a common platform to cobble together the diverse research findings on Toxicology, Conservation and Biodiversity, but would also help in envolving strategies for managing the current situation.

A BRPM competition will also be organised to promote and encourage budding scientists.

In the technical session, the topics Proposed to be discussed are: (1) Ecotoxicology : Impact of Toxic substances on ecosystems and their components; Impact assessment studies – Current practices, Methods, Case studies and Status reviews; (2) Toxicology of Pesticides, Heavy metals, Industrial effluents, Detergents, Drugs. etc.; Detection, Characterization, Bioevaluation and Mechancism of Toxicity; Toxicological Methods; (3) Biodiversity (Genetic diversity, Species diversity and Ecosystem diversity); Forest & Wildlife conservation; Genetic resources and its sustainable utilization; and (4) Environmental Pollution – Sources, Indicators, Dynamics & Monitoring techniques; Environmental Protection Strategies; Environmental Radiations and their Impact; Environmental Management and Legislation.

Further information may be obtained for Dr. M.C. Bhatnagar, Org. Sec., 13th Annual Session of AEB, Department of Zoology, Meerut College, Meerut-250001 (India), OR The Secretary (HQ), The Academy of Environmental Biology, 771, Civil Lines (South), Muzaffarnagar-250001, India.

Question Banking in Computer Science

A three-day workshop on Question Banking in the subject of Computer Science was held at the Birla Instt. of Technology & Science, (BITS), Pilani from 14th to 16th May 1992 under the auspices of the Association of Indian Universities (AIU). Inaugurating the Workshop Dr. S. Venkateswaran, Director of BITS highlighted the need of question bank and how it was considered important to bring educational reforms in the country.

Shri P. K. Malhan, Asstt Director (Res), AIU outlined the basic principles of Question Banking and in particular the development of valid & reliable questions/items in the subject through a series of specially conducted workshops getting a large body of teachers to participate in item/question writing, prevalidating & interacting.

During the Course of the workshop lectures were delivered in the areas of (i) selection & supply type questions; and (ii) instructional objectives & prevalidation of question/items.

The participants were divided into small groups to do several assignments including, choice of objectives and abilities to be tested on the various syllabus topics, preparing selection type items (constant alternative, multiple question, simple question, short answer questions, long answer, short answer questions, long answer & problem solving question) in order to enable them to write good quality items & questions.

In all 1025 questions/items were produced in the workshop which was attended by 16 participants.

Human Rights in Assam and NE States

A seminar on Human Rights was held recently under the auspices of the Post-Graduate Department of Law, Gauhati University. Sponsored by the UGC, the seminar was inaugurated by Mr. Baharul Islam, former Judge of Supreme Court while Dr. N.K. Chodhury, Vice-Chancellor, presided over the inaugural function.

The recommendations made at the seminar stressed on the promotion of human rights studies and research in the country, adherence to the universal standard as set out by the International bill of Human Rights, improvement for the procedure of accountability in the case of violations and promotion of the rights and responsibilities of individuals as the subject of International law in the overall context of human rights protection in the country, the region and elsewhere. The Director of the Seminar Dr. Naorem Sanajaoba, Head of the Post-Graduate Department of Law, formulated the latest up-to-date of human rights instruments, discourses, standard-setting, role of IGOS and NGOS.

About 30 multi-disciplinary papers were read at the seminar which was attended by over 50 local and outstation participants.

Refresher Courses in Lib. & Inf. Science

The Department of Library & Information Science of the Aligarh Muslim University proposes to organise two UGC sponsored Refresher Courses in Library & Information Science during October, 1992 to January 1993. These courses are on (i) Modernization of Libraries and Information Centres – 28.10.92 to 25.11.92; and (ii) Scientific Management of Science and Technology Libraries and their services – 04.01.93 to 31.01.93. The Courses are intended the Lecturers in Library Science and the Librarians/Asstt. Librarians, who are in the pay-scale of Rs.2200-4000 and working in University and College Libraries with a minimum of 5 years experience.

Further information may be obtained for Prof. Mohd. Sabir Husain, Chairman, Department of Library & Information Science, Aligarh Muslim University, Aligarh-202 002.

National Science Day

The Tamil Nadu Veterinary and Animal Sciences University recently celebrated the National Science Day. Shri M.Anandan, State Minister for Animal Husbandry was the chief guest at the function got up on the occasion while Dr.P.Richard, Masillamony, Vice-Chancellor of the University presided.

Speaking on the occasion Shri M.Anandan emphasised the importance of Science and Technology in the uplift of economically poor sections of the society.

Telugu University Awards 1991-92

Mr.K.Rosaiah, Minister for Medical & Health, Government of Andhra Pradesh, presented the Telugu University Literary and Endowment Awards for the year 1991-92, for works in various genres of Telugu Literature. The literary awards carried a cash prize of Rs.5000 each besides a citation, while the endowment awards carry Rs.1116/- cash each. Speaking on the occasion, Mr. Rosaiah wished that the writers, poets who got the awards would write more books to mould the society.

Prof. C.Narayana Reddy, Vice-Chancellor, Telugu University presided over the function.

News from UGC

Countrywide Classroom Programme

Between 18th June to 24th June 1992 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 1.00 p.m. to 2.00 p.m. and 4.00 p.m. to 5.00 p.m. The programme is available on the TV Network throughout the country.

Ist Transmission

1.00 p.m. to 2.00 p.m.

18.06.92

"Communicating Communication: IV:Communication as a System"

"What Shaped our Earth?

"19th Century Russian Literature:Anton Chekhov"

19.06.92

"We The People--------: VII:Indian Federation and Development"

"The 30% Reservation"

"Plant Viruses-II"

20.06.92

"Guitar:The Versatile Instrument"

"Desabhashalandu Telugu Lessa"

"The Week Ahead"

21.06.92

No Telecast

22.06.92

"Simple Harmonic Motion"

"The Business File:Marketing Distribution Strategy"

23.06.92

"New Methods of Food Protection"

"Sanskrit Through the ages" Vedic Gupta Period"

"Drugs: Use and Abuse-I"

24.06.92

"Plastics:The World of Imagination"

"National Movement"

IInd Transmission

4.00 p.m. to 5.00 p.m.

18.06.92

"Gunther Haese"

"Spectral Properties in Geological Remote Sensing"

"Masterpieces in World Literature:Fyodore Nikhailovich Dostayevesky"

19.06.92

"We, the People ------II: The Constitution and Minorities"

"Innovation: Rain or Shine"

20.06.92

"The Potato Eaters-I"

"From Desert to Mountains: An Expedition to Hathi Parbat"

"The Week Ahead"

21.06.92

No Telecast

22.06.92

"C.P. Violation"

"New Industrial Policy"

23.6.92

"Mystery of Colours"

"Contract Act-I"

Philosophy of Homeopathy-II"

24.06.92

"Corrosion-I"

"Tropical Cyclones-II"

"The Pest story-II: Biological Control of Water Hyacinh"

Centenary Grants to Colleges

The UGC has decided to provide special assistance of Rupees twenty lakh to each of the following colleges established during the last century and as have completed 100 years of their existence to meet expenditure of capital nature like construction of academic buildings with the UGC share on 100 per cent basis. The Colleges are: American College (1981), Madurai, and St. John's College (1857), Agra.

With this the total number of such assisted colleges has gone up to 35.

News from Abroad

Educational Costs and Financing for Developing Countries

Representatives from UNESCO, OECD and the IIEP met in Paris to discuss issues on research in the field of educational costs and financing; to identify the most important of them in the present context of developing countries; to speficy their content and to outline the most suitable methodology for each of them. The discussion was centred around four aspects: financial management, the financing of education systems, costing and financing data systems, and teaching personnel.

The management of the financial or equivalent resources (jobs, posts, personnel, hours of work) allotted to an education system should aim to distribute such resources within the system efficiently and equitably. The mission of IIEP is to train planners, notably through its Annual Training Programme. The Institute should therefore encourage those concerned to give thought to the procedures employed for the management of resources in their respective countries.

Four main areas of study were identified :

The preparation and application of the budget of the Ministry of Education : The participants placed particular importance on the analysis of the mechanisms and methods employed and the identification of information relevant to efficient resource management. Different types of organisation can be highlighted by examining countries possessing varied administrative structures and traditions, rather than by a comparative approach.

Decentralization : Some countries have a traditionally decentralized administration, while other have only recently embarked upon a process of decentralization or deconcentration. The objectives are numerous, and include bringing decision-making down to the local level, reducing the central government's share of financing, cutting costs and improving efficiency.

However, participants at the meeting considered this to be an important aspect of the administrative organization of education systems, and one to which thought should be given. A study on the delegation of authority, especially with regard to financing in countries which have adopted or wish to adopt decentralized procedures, could also prove useful.

External aid : The participants recognized the importance and difficulty of this aspect. Assessing the extent of external aid and reflecting on methodology are the first steps to be taken prior to initiating studies on the subject.

Investments : The participants considered that an economic analysis of this problem could help to create awareness of the financial consequences of lack of maintenance. Attempts should be made to find sound ways and means of financing maintenance (for example, special extra-budgetary funds). What can be learned from the experience of various countries in this connection? Are the requisite data available for such analyses?

The participants stressed on exploring the possibilities of alleviating the inadequacy of budgetary resources from public funds. They also discussed introducing market mechanisms into the management and financing of schools, the problems of free education, family participation in education costs, as well as the organization and financing of vocational training, whether within the education system or on-the-job. They also sought to appeal for contributions from private sources or to introduce enrolment fees.

Highly Educative

S. K. Agrawala*

M. V. Mathur and R. K. Arora, Ed. The Vice-Chancellors Remember. New Delhi, Associated Publishing House, 1992. Pp.368. Rs.350/-.

Not many books have been published compiling the reminiscences of Vice-Chancellors. This is such a compilation and with a difference. The editors have been extremely discreet in inviting the write-ups. The contributions (numbering 26) of only those who had a distinguished track-record have been included. As the blurb reads "The galaxy of contributors has brought a variety of perspectives, orientations and foci to the understanding of common as well as uncommon problems of educational administration." Besides the recollections of individual Vice-Chancellors, the introductory and the concluding chapters added by the editors, give the perspective with which the reminiscences could be read much more meaningfully and identify certain issues which could form the basis of meaningful debate and discussion in the context of the crisis in which the university administration finds itself at most of the places.

The recollections of individual Vice-Chancellors included in the volume have a lot in them for the education of all, including potential Vice-Chancellors as well as of those in office. The reminiscences illustrate the live situations and problems which were faced by Vice-Chancellors in a variety of universities and as to how were they tackled by them. Illustrations also abound to drive home the point as to how firmness in the face of heavy odds, strength of one's convictions, a humane approach, easy accessibility, statesmanship, vision and creativity, proper time management, and other such qualities, go a long way contributing to the success of a Vice-Chancellor. However, no method presently exists which could ensure that persons with such desirable qualities enter into Vice-Chancellorships, nor is there any certainty that a person will necessarily succeed if he has these attributes. Arora mentions, very rightly, in the introductory chapter that a visionary Vice-Chancellor, supported by the Government, community, faculty and staff is most likely to succeed. But can a combination of these fortuitous circumstances be ensured to any Vice-Chancellor?

The reminiscences also bring out that the administrative structure(s) existing in the universities have to be viewed afresh in the context of the change in the character and responsibilities of universities. It has also to be appreciated that institutions in the university system in India are far from identical. We have IITs, technical and medical universities, agricultural universities, deemed universities, central universities, open universities, language universities, women's universities and a large number of traditional universities – most of them being affiliating. Even amongst the traditional universities, the cultural and social milieu in which they operate differs from one region to another or even from one university to another. Each set of universities requires administrative structure as well as personnel, including the Vice-Chancellor, typically suited to the needs of that university. The open, democratic and consultative structures and ethos of university bodies, have also to be taken into account while suggesting any modifications. Wide consensus, however, exists on the urgent need for decentralisation of university administration, fixing of terminal responsibilities on senior functionaries from the Vice-Chancellor downwards and for providing for delegation of authority. Arora has rightly commented that the administration requires to be made more system-oriented than person-oriented.

Taking the above perspectives into account, alternative models of management have been suggested in a UGC Committee Report, popularly known as "Gnanam Committee Report". Despite the fact that the Report was widely circulated, it does not seem to have been noticed by many and the discussion on it has been minimal.

The problem of the intrusion of politics and politicians in the university affairs in myriad ways is no less serious. The university system is only a sub-system of the wider socio-economic system. The former cannot remain unaffected by the latter, and vice-versa. The skill and the statesmanship of the best of Vice-Chancellors can only marginally deal with these factors successfully.

**Seceratry, Association of Indian Universities, New Delhi.*

A general improvement in our socio-political milieu as a whole could be the only answer, which of course is a much wider question.

The days of people with publicly established stature taking up Vice-Chancellorship are gone; nor do great leaders seem to be necessarily making great educational institutions any more. The problems which Vice-Chancellors are required to handle are legion. He mostly moves from crisis to crisis. No Vice-Chancellor can function successfully today without the support of the government and the local administration. The quality of eliciting their support must also be a necessary component of the personality of the person to be selected as a Vice-Chancellor. The powers enjoyed by him are completely disproportionate to the responsibilities that have been thrust on him. The pressure of crisis management leaves little time with him to concentrate upon the developmental and creative aspects of academic management. The present practice of each search committee member including his separate nominee in the list can only ensure the ultimate appointment of a political protege. It needs to be immediately given up. There is great merit in the suggestion that the potential candidates and their performance and conduct requires to be watched over a period of time and they be empanelled only if they possess the traits of personality and capabilities mentioned above, by committees consisting of members with impeccable integrity and a person be appointed as Vice-Chancellor out of those respective panels only. But can that be done? Would it be acceptable to the power brokers? The relationships of the Vice-Chancellor with the top political functionaries like the Visitor and the Chancellor also require to be governed by certain rules of conduct.

M. V. Mathur in his concluding remarks has focused on the significant problems of university administration faced by Vice-Chancellors viz., conduct of examinations, student unrest, teacher turmoil, financial difficulties, political interference and lack of perspective planning and has offered certain tentative suggestions with respect to each of them. He also emphasises the need for institutional autonomy, consultative and grievance redressal mechanisms within the university system, need for human resource development and the need for orientation of even the Vice-Chancellors. He also projects the idea of the empanelment of potential Vice-Chancellors. He refers to his pet concept of 100 percent government institutions existing side by side with 100 percent private institutions. He has also referred to the linkage of higher education with the planning system, delinking degrees and jobs and developing think-tanks (may be the State Councils of Higher Education or any other). Many of the suggestions made by him have a freshness about them and require careful consideration by educationists and others concerned with the welfare of universities.

The empirical reality pertaining to the functioning of the university system is certainly required to be unfolded before one is able to suggest meaningful correctives. It is self-evident that this reality can be only partially unfolded through the reminiscences of Vice-Chancellors. What is also required are well articulated studies by social scientists which can bring the reality to public focus, bit by bit. Reference may be made to one such study by Prof Uday Desai, "University Vice-Chancellor : Profiles in Leadership". Hindustan Publishing Corporation, Delhi, 1991. (It has been reviewed in *Hindustan Times* dated Feb. 6, 1992. The ICSSR and the UGC would do well by including this theme amongst the thrust area of research.

Because of the rich material which this book contains on varied and vital matters of university administration, planning and development, as actually experienced and practised by Vice-Chancellors, it is a most readable book as well as highly educative. It also indicates the directions for future discussion on basic problems affecting university administration and development and impliedly projects the need for empirical studies on the subject by social scientists.

The editors deserve the commendation of the academic community for a difficult job superbly done.

BOOKS RECEIVED

1. Chalam, K S, Ed. **Academic staff development in higher education.** Calcutta: K P Bagchi & Co, 1991. xix,306p. Rs.250.00 (HB).

2. Cherunilam, Francis. **Economic reforms in India and abroad.** Bombay: Himalaya Pub House, 1992. 104p. Rs.150.00 (HB).

3. Dhar, B B and Singh, T. **Academic staff colleges: A developing concept.** New Delhi: Sterling Pub Pvt Ltd, 1990. v,70p. Rs.90.00 (HB).

4. Kothari, V N, Ed. **Issues in human capital theory and human resource development policy.** Bombay: Himalaya Pub House, 1991. xx, 236p. Rs.225.00 (HB).

5. Michael, V P. **Management for managers.** Bombay: Himalaya Pub House, 1992. 281p. Rs.250.00 (HB).

6. Ramachandran, C N and others, Ed. **Perspectives on Dakshina Kannada and Kodagu: Mangalore University decennial volume.** Mangalagangotri: Mangalore University, 1991. ix, 349p. Rs.250.00 (HB).

7. Ramnath Goenka Memorial Seminar (Goa) (1992). **Changing face of journalism: Papers.** Goa: Communication Study Circle. Govt College of Arts and Commerce, 1992. 59p. Rs. 10.00 (PB).

8. **Seminar on Consumer Protection and Public Distribution System (Bhopal) (1991). Papers.** Bhopal: National Centre for Human Settlements and Environment, 1992. 76p. Rs. 25.00 (PB).

9. Shah, Prakash J. **How to develop positive life.** New Delhi: Sultan Chand & Sons, 1990. 72p. Rs.10.00 (PB).

10. **How to develop personality.** New Delhi: Sultan Chand & Sons, 1989. 85p. Rs.10.00 (PB).

CALENDAR OF EVENTS

Proposed Date of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/ Officer to be Contacted
July 28-30, 1992	Fourth International Conference on Assessing Quality in Higher Education	To promote awareness of current issues and perspectives on the assessment of quality in higher education	University of Twente Enschede, The Netherlands	Mr. Trudy W. Banta Director, Center for Assessment Research and Development, The University of Tennessee, 1819 Andy Hold Avenue, Knoxville, Tennessee 37996-4350
August 11-16, 1992	8th World Congress for Rural Sociology	Theme : Rural Society in the Changing World Order	International Rural Sociology Association, USA	The Pennsylvania State University, 306, Agricultural Administration Building, University Park, Pennsylvania - 16802
August 16-19, 1992	55th Annual Meeting of the Rural Sociological Society	Theme : Rurality and the Global Environment	Rural Sociological Society, USA	-do-
August 25-28, 1992	Second Afro-Asian Psychological Congress	Theme : Psychology for Social Development and Human Welfare	The Chinese Psychological Society	Prof. Wang Su, Congress Secretariat, Department of Psychology, Peking University, Beijing-100871
August 26-28, 1992	Second International ISKO Conference on Cognitive Paradigms in Knowledge Organisation	To provide a forum for scholars working in the field of knowledge organisation	Madras Library Association in collaboration with Sarada Ranganathan Endowment for Library Science and University of Madras	Mr. S. N. Kumar Conference Secretariat, 5, Sivaganga Road, Madras-600 034
September 21-23, 1992	Sixth Annual Conference of the Asian Association of Open Universities	Theme : The Role of Open Universities in promoting Education for All	Korean Society for the Study of Distance Education	Dr. In Sung Jung, Secretariat, AAOU 1992 Annual Conference C/O Korea Air and Correspondence University 169, Dongsung-Dong, Chongro-Ku, Seoul 110-791, Korea
October 26-31, 1992	Third IAU Mid-Term Conference to be held at Alexandria, Egypt	Theme:Adaptation of University Management Structures and Strategies for New Requirement	International Association of Universities (IAU), France	Dr Franz Eberhard, Secretary General, International Association of Universities, 1, rue Miollis, 75732 Paris Cedex 15 France
November 9-13, 1992	16th World Conference on Distance Education for the Twenty-First Century	To give a view of the aspects of development in Distance Education in the Twenty-First Century	International Council for Distance Education, in cooperation with Sukhothai Thammathirat Open University (STOU), Thailand	Mr. Bruce Scriven, Program Chair—16th World Conference of ICDE, Queensland University of Technology, Locked Bag No. 2, Red Hill Queensland 4059, Australia
November 18-20, 1992	VIII Carbohydrate Conference	Exchange of information on recent advances in Carbohydrate research	The Association of Carbohydrate-Chemists and Technologists (India) in collaboration with Regional Research Laboratory, Trivandrum	Dr. Ashok Pandey, Convener or Dr. K.C.M. Raja, Organising Secretary, VIII Carbohydrate Conference, Regional Research Laboratory, Trivandrum-695019
December 14-31, 1992	Short Term Course on Polymeric Materials Product Technology (PMPT-92)	To provide an insight into the specialised behaviour of Polymeric Materials.	Materials Science Centre, IIT, Kharagpur	Dr. Ajit K. Banthia Coordinator, PMPT-92, Materials Science Centre, Indian Institute of Technology Kharagpur - 721302

S.N.D.T. COLLEGE OF EDUCATION FOR WOMEN

(Conducted College of SNDT Women's University, Bombay)

Karve Road, Pune-411 038

Applications for the following courses are invited for eligible women candidates.

Course	Medium	Eligibility
M.Ed.	English and Marathi	B.Ed. of any recognised University
M.Phil. (Education)	English	M.Ed. of any recognised University

For application forms and details, send Postal Order of Rs.10/- with self addressed stamped envelope.

Last date of receipt of applications

5th July, 1992 for M.Ed. and
5th August, 1992 for M.Phil.

PRINCIPAL

SHRI LAL BAHADUR SHASTRI RASHTRIYA SANSKRIT VIDYAPEETHA

(DEEMED UNIVERSITY)

KATWARIA SARAI, NEW DELHI-16

NO:./B/RSV/92/

ADMISSION NOTICE (1992-93)

Applications are invited for admission to the following courses at Shri Lal Bahadur Shastri Rashtriya Sanskrit Vidyapeetha (Deemed University), Katwaria Sarai, New Delhi-110 016 for the academic year 1992-93.

S.No.	Courses	Duration	Equivalence	Eligibility
1.	Shastri	Three years	B.A.	Madhyama or Senior Secondary/Intermediate (Sanskrit) with minimum 40% marks in aggregate.
2.	Acharya	Two years	M.A.	Shastri or B.A. (Skt,). Three year degree course with minimum 40% marks.
3.	Vidya-Varidhi	Two years	Ph.D	Acharya/M.S (Skt.) minimum 55% marks in aggregate.

The medium of instruction is **SANSKRIT**. Merit Scholarships will be awarded to the students who have been admitted in the above courses as per existing rules at the following rates:-

i)	Shastri	@ Rs.100/- per month.
ii)	Acharya	@ Rs.150/- per month.
iii)	Vidya Varidhi	@ Rs.500/- per month.

The application form and prospectus can be had from the office of the Registrar of the Vidyapeetha on or before 29th June, 1992 on payment of Rs.10/- in cash or by sending a crossed Demand Draft of Rs.20/- in favour of Finance Officer, Shri Lal Bahadur Shastri Rashtriya Sanskrit Vidyapeetha, New Delhi.

The last date for receipt of duly filled in application forms in **30th June, 1992.**

CH. Sambaiah
REGISTRAR

RESEARCH IN PROGRESS

A list of Research Scholars registered for Doctoral Degrees in Indian Universities

SOCIAL SCIENCES

Library & Information Science

1. Pathania, Mohan Singh. **Expansion and modification of Dewey Decimal Classification (20th Ed) for classifying the forestry documents.** Panjab. Dr (Mrs) Ranjana Vohra, Department of Library and Information Science, Panjab University, Chandigarh.

2. Sukanya. **Status of library documentation and information services in CSIR laboratories in India: A critical study.** Panjab. Dr H R Chopra, Department of Library and Information Science, Panjab University, Chandigarh.

Psychology

1. Ansari, A M. **Psychological and socio-demographic factors related to recovery from surgery.** Kerala. Dr Krishnaprasad Sreedhar, Prof, Department of Psychology, University of Kerala, Kariavattom.

2. Balagopal, Cindu. **Psychological problems of people undergoing plastic surgery: An analytical study.** Kerala. Dr Krishnaprasad Sreedhar, Prof,Department of Psychology, University of Kerala, Kariavattom.

3. Cheriyan, Ann. **Stress among cancer women: An analytical study.** Kerala. Dr B Dharmangadan, Prof, Department of Psychology, University of Kerala, Kariavattom.

4. Manoj Sankar, V. **Psycho-social factors related to relapse of substance abuse.** Kerala. Dr Krishnaprasad Sreedhar, Prof, Department of Psychology, University of Kerala, Kariavattom.

5. Nair, Anil Kumar. **A comparative study of criminals guilty of misdemdanour and felony.** Kerala. Dr K Devadasa, Prof and Head, Department of Psychology, University of Kerala, Kariavattom.

6. Rajkumar, G. **Adivasis: A psycho-social study.** Kerala. Dr K Devadasan, Prof and Head, Department of Psychology, University of Kerala, Kariavattom.

7. Yesodharan, M R. **Certain types of literature and its impact on attitudes, values and personality.** Kerala. Dr H Samsananda Raj, Reader. Department of Psychology. University of Kerala, Kariavattom.

Sociology

1. Leela, M S. **Social factors in formal education.** Kerala. Dr G Ramachandra Raj, Prof, Department of Sociology, University of Kerala, Kariavattom.

Social Anthropology

1. Mehra, Priti. **Women, work and position; a comparative view: A study conducted among Gaddis of Kangra and Chamba Districts of Himachal Pradesh.** Delhi. Dr R S Mann, Department of Anthropology, University of Delhi, Delhi.

2. Singh, Kumar Amarendra Narayan. **Development and social change: A case study of the Dublas of South Gujarat.** Delhi. Dr R S Mann, Department of Anthropology, University of Delhi, Delhi.

Economics

1. Ajay, Saroj. **M P mein samaj kalyan karyakramon per sarvajanik vyaya ka prabhav: Indore Jile ke sandarbh mein vishesh adhyayan.** Vikram. Dr B C Simesra, Prof. Department of Economics, Govt College, Mandsaur.

2. Bharadwaj, Kamal. **Chambal Sambhag ke audyogik vikas mein Madhya Pradesh Audyogik Kendra Vikas Nigam (Gwalior) kee bhoomika ka alochnatmak adhyayan.** Jiwaji. Dr S K Shukla, Department of Economics, Jiwaji University, Gwalior.

3. Misra, Vidyottama. **Tourism industry and its impact on economic development of Madhya Pradesh with special reference to Northern M P.** Jiwaji. Dr S K Shukla, Department of Economics, Jiwaji University, Gwalior.

4. Sharma, Rashmi Kumari. **Human elements in Gandhian economics.** Panjab. Dr S L Malhotra, Department of Gandhian Studies, Panjab University, Chandigarh.

Commerce

1. Kaushik, Sanjay. **Social objectives and profitability of Indian banks.** Panjab. Prof B B Tandon, Department of Commerce and Business Management, Panjab University, Chandigarh.

2. Navdeep Kaur. **Export performance of selected units in the services sector in India.** Panjab. Dr Satish Kapoor, Reader, Department of Commerce and Business Management, Panjab University, Chandigarh.

Management

1. Harveen Kaur. **Marketing feasibility analysis: A study of projects of Punjab State Industrial Development Corporation.** Panjab. Prof S P Singh, Department of Commerce and Business Management, Panjab University Chandigarh.

2. Mani, Ghaneshwar. **Madhya Pradesh Rajya upkramon mein nigamiya prativedan vyavharon ka mulyankan.** Vikram. Dr Nageshwar Rao.

3. Sanjeev Kumar. **Financial planning and control of State Transport Undertakings of Punjab, Haryana and Himachal Pradesh.** Panjab. Dr S C Vaidya, Reader, Department of Commerce and Business Management, Panjab University, Chandigarh.

HUMANITIES

Philosophy

1. Geetha, T. **Evolutionism of Teilhard De Chardin.** Kerala. Dr K Saratchandra, Prof and Head,Department of Philosophy, University of Kerala, Kariavattom.

Religion

1. Rabia, T A. **Muslim society in Kerala during the 19th and 20th centuries as reflected in Mappilapats.** Kerala. Dr K T Mohamed Ali, Reader and Head, Department of Islamic Studies, University of Kerala, Kariavattom.

Fine Arts

Music

1. Bhavana, T M. **A comparative study of the raga chapters of Sangita Ratnakara and Sangita Saramruta.** Kerala. Dr M Hariharan, Asstt Prof, Sree Sathguru Sangeetha Vidyalayam, Thalakulam, Madurai.

Language & Literature

Punjabi

1. Amarjit Kaur. **Guru Nanak kavi da lokyanik adhyayan.** Panjab. Dr Darshan Singh, Department of Guru Nanak Sikh Studies, Panjab University, Chandigarh and Dr K S Thind, Khalsa College, Amritsar.

2. Jasbir Kaur. **Gurumat sangeet da itihasik vikas: Pandarvin sadi ton atharvin sadi tak.** Panjab. Dr Darshan Singh, Department of Guru Nanak Sikh Studies, Panjab University, Chandigarh and Dr Gurnam Singh, Department of Punjabi Development, Punjabi University, Patiala.

3. Manjit Singh. **Guru Granth Sahib vich paryukt prashnotri jugat da adhyayan.** Panjab. Dr Darshan Singh, Department of Guru Nanak Sikh Studies, Panjab University, Chandigarh.

Hindi

1. Chauhan, Rekha. **Tulsi ke 'Ramcharit Manas mein samaj**

parikalpana. HP. Dr C L Gupta, Department of Hindi, Directorate of Correspondence Courses, Himachal Pradesh University, Shimla.

2. Harinder Kumar. **Maithili Sharan Gupta evam Ramdhari Singh Dinkar ke kavya mein vyakta rashtriya chetna ka tulnatmak adhyayan.** HP. Dr C L Gupta, Department of Hindi, Directorate of Correspondence Courses, Himachal Pradesh University, Shimla.

3. Kanya Devi. **Shrilal Shukla ke upanyason mein samajik chetna.** HP. Dr Jagat Pal Sharma, Department of Hindi, Himachal Pradesh University, Shimla.

4. Kavita. **Narendra Kohli ke katha sahitya mein samkaleen yatharth.** HP. Dr Anjana Chauhan, Department of Hindi, Himachal Pradesh University, Shimla.

5. Krishna Kumari. **Haryana kee nirgun kavya parampara aur Sant Nityanand.** HP. Dr Ram Nath Mehta, Department of Hindi, Himachal Pradesh University, Evening College, Shimla.

6. Nakhrata, Anant Ram. **Noven dashak kee Hindi kavita: Kathya evam shilpa.** HP. Dr Krishan Kumar, Department of Hindi, Directorate of Correspondence Courses, Himachal Pradesh University, Shimla.

7. Parmodh Singh. **Dushyant ka kavya: Vastu evam shilpa.** HP. Dr Gautam Sharma, Department of Hindi, Govt Postgraduate College, Dharamshala.

8. Priya Ambika Kumari. **Shrilal Shukla aur Narendra Kohli ke upanyason mein samaj sameeksha: Vyanga ke sandarbh mein.** HP. Dr Chaman Lal Gupta, Department of Hindi, Directorate of Correspondence Courses, Himachal Pradesh University, Shimla.

9. Sharma, Ashok. **Jaishankar Prasad kee itihas drishti unke natakon evam Kamayani ke sandarbh mein.** HP. Dr Lallan Rai, Department of Hindi, Himachal Pradesh University, Shimla.

10. Sharma, Bhupindra. **Rajendra Yadav aur Mannu Bhandari ke katha sahitya mein manviya sambandhon kee avadharna.** HP. Dr (Mrs.) Krishna Raina, Department of Hindi, Himachal Pradesh University, Shimla.

11. Sharma, Karuna. **Laxminarayan Lal ke natak sahitya mein vyakta unki samajik drishti.** HP. Dr Lallan Rai, Department of Hindi, Himachal Pradesh University, Shimla.

12. Sharma, Kusum. **Kavi Rajesh Dyalu Rajesh: Vyaktitva evam krititva.** HP. Dr Raj Deo Singh, Department of Hindi, Himachal Pradesh University, Shimla.

13. Sharma, Veneeta. **Mamta Kalia aur Ravindra Kalia ke katha sahitya mein chitrit samasyayon ka tulnatmak adhyayan.** HP. Dr (Mrs) Krishna Raina, Department of Hindi, Himachal Pradesh University, Shimla.

14. Sushil Kumar. **Agyeya ka katha sahitya mein pashchatya darshan: Manovishleshan evam astitvavad ke vishesh sandarbh mein.** HP. Dr Sarswati Bhalla, Department of Hindi, Himachal Pradesh University, Shimla.

15. Tarsem Raj. **Adhunik Hindi kavita mein Krishan ka swaroop.** HP. Dr (Mrs) Krishna Raina, Department of Hindi, Himachal Pradesh University, Shimla.

Malayalam

1. Mini, G S . **Alienation of individuality in the short stories of T Padmanabhan.** Kerala. Dr S Rajasekharan, Lecturer, Department of Malayalam, Govt College for Women, Thiruvananthapuram.

2. Sherly, P S. **Samoshika jeevita pratifalanam C Radakrishnante novealukali.** Kerala. Dr S Rajasekharan, Lecturer, Department of Malayalam, Govt College for Women, Thiruvananthapuram.

3. Shifa, S. **Samakala samoohika paschathalathil Cherukadinte novaluka oru patanam.** Kerala. Dr S Rajasekharan, Lecturer, Govt College for Women, Thiruvananthapuram.

4. Sreekumar, R V. **The literary aspects of the non-religious folk songs.** Kerala. Dr B Sudhakaran Pillai, Prof, Department of Malayalam, M G College, Thiruvananthapuram.

5. Thanooja, S. **House names of Kerala: An analytical study.** Kerala. Dr K M George, Karimpumannil House, Mummy's Colony, Kowdiar, Thiruvananathapuram.

History

1. Abraham, K M. **Political movements for responsible Government in Cochin, 1900-1947.** Kerala. Dr K K Kusumam, Reader, Department of History, University of Kerala, Kariavattom.

2. Bhupinder Kaur. **Guru Nanak Bani da Panjab de itihas ate rajniti ute prabhav.** Panjab. Dr G S Gill, Departent of Continuing Education, Panjab University, Chandigarh.

3. Soni, Rakesh Kumar. **Bundelkhand mein sangeet tatha natya ka vivechan, isvi 300 se 1200 tak.** H S Gour. Dr V D Jha.

THESES OF THE MONTH

A list of Doctoral Theses accepted by Indian Universities

SOCIAL SCIENCES

Library & Information Science

1. Das, Kailash Chandra. **Library facilities, information seeking and the development of curricular activites in secondary schools with special reference to Ganjam District of Orissa.** Berhampur. Dr M Mohapatro, Prof, Department of Library and Information Science, Utkal University, Bhubaneswar.

Psychology

1. Baidwan, Paramjit Kaur. **A study of conditionability for various pronouns in relation to age, sex and personality.** Punjabi. Dr Satnam Singh Khumar, Lecturer, Department of Psychology, Punjabi University, Patiala.

2. Kapila, Asha. **Effect of personality variables on problem solving among women.** HP.

3. Mahesh Prasad. **An experimental investigation on iconic memory.** Delhi.

4. Panda, Bharati. **Factors associated with happiness in marriage.** Sambalpur. Dr M B Sharan, Prof, Department of Humanities and Social Sciences, Indian Institute of Technology, Kharagpur.

5. Sandhu, Harinder M. **A study of organizational commitment and job involvement in relation to role stress, protestant work ethic, organizational climate and orientation.** Panjab.

6. Suman, L N. **Personality and interpersonal relationships in families of alcohol dependent individuals.** Bangalore. Dr S V Nagalakshmi, Asstt Prof, Department of Clinical Psychology, National Institute of Mental Health and Neuro Sciences, Bangalore.

7. Taluja, Harsh. **A study of N-autonomy, N-achievement and N- affiliation among children of working and non-working women as related to childrearing practices.** AMU. Mrs Roquiya Zainuddin.

8. Vadra, Priti. **Role stress and occupational stress as correlates of job-involvement.** AMU. Prof S Sultan Akhtar.

Sociology

1. Chauhan, Santosh. **Employment and fertility: A study of employed women and housewives in Rohtak City.** Punjabi. Dr P S Jammu, Prof, Department of Sociology, Punjabi University, Patiala.

2. Dixit, Dhruv Kumar. **Vidyarthiyon mein nasheele padarthon ka sewan: Rani Durgawati Vishwavidyalaya ke sandarbh mein ek samajshastriya adhyayan.** Durgawati. Dr R K Gupta, Prof and Head (Retd), Department of Sociology, Rani Durgawati Vishwavidyalaya, Jabalpur.

3. Goutam, Kusum. **Samajik Vankiya mein karyarat mahilayon ka samaj shastriya adhyayan: Jabalpur aur Sivani kshetra ke vishesh sandarbh mein.** Durgawati. Dr Aruna Singh, 2130, Wright Town, Jabalpur.

4. Md. Ishtiyaque. **Dialectal/linguistic change among the scheduled tribes in India and its correlates: A geographical analysis.** JNU. Prof Aijazuddin Ahmad, Centre for the Study of Regional Development, Jawaharlal Nehru University, New Delhi.

5. Nema, Rajesh Kumar. **Bediya samudaya: Inki samajik sanskritik sthiti ka ek samaj shastriya adhyayan.** H S Gour. Dr R M Ram, Department of Sociology, Dr Harisingh Gour Vishwavidyalaya, Sagar.

6. Palit, Soumya Kanti. **Social and cultural matrix of industrial entrepreneurship: A case study of selected small scale industries in Orissa.** JNU. Prof Yogendra Singh, Centre for the Study of Social Systems, Jawaharlal Nehru University, New Delhi.

7. Sachdev, Rekha. **Socialization of the child in an industrial society with special reference to slum areas of Indore.** Devi Ahilya. Dr K P Pothan, Ex-Principal, Indore Christian College, Indore.

8. Sen Pasayat, Chitra. **Rural-urban continuum and folk culture: An examination of persistence and change in Sambalpur.** JNU. Prof T K Oommen, Centre for the Study of Social Systems, Jawaharlal Nehru University, New Delhi.

9. Swarnalatha, A. **Status of women and fertility behaviour.** Venkateswara. Prof K Mahadeva, Department of Population Studies, Sri Venkateswara University College, Tirupati.

10. Trivedi, Rashmi. **Bega samaj mein samajik sanskritik parivartan: Teen Gramon ka tulnatmak adhyayan.** H S Gour. Dr Diwakar Sharma, Department of Sociology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

Social Anthropology

1. Ananda, G. **A study on tribal ashram schools among the Chenchus of Nallamalai Hills in Andhra Pradesh.** Venkateswara. Dr P Sudhakara Reddy, Lecturer, Department of Social Anthropology, Sri Venkateswara University College, Tirupati.

2. Sahu, Jayadev. **One hundred years of leprosy work in Orissa, 1885-1984.** Sambalpur. Dr S N Ratha, Prof, Department of Anthropology, Sambalpur University, Jyoti Vihar, Burla.

Social Work

1. Sehgal, Ranjna. **Social work in industry problems and practices of the personnel/welfare function-aries: A study with reference to the industrial units in Indore, Dewas and Ujjain District.** Devi Ahilya. Dr W S K Philips, Prof, Indore School of Social Work, Indore.

Political Science

1. Abdetta, Dibaba. **Non-aligned movement and relevance in the changing international relations.** HP.

2. Bagga, Sangita. **Raipur Jile mein dabav samuh ke bhumika: Ek adhyayan.** Ravishankar. Dr K R Deshmukh, Department of Political Science, Durga College, Raipur.

3. Bhuvaneswar Prasad, M P. **District administration in Karnataka: A case study of Bangalore Rural District.** Bangalore. Dr Narayana, Prof, Department of Political Science, Bangalore University, Bangalore.

4. Dhareula, Kirpa Ram. **Office of the Speaker and Legislative Process: A case study of Himachal Pradesh.** HP.

5. Engle, Kalpana. **Madhya Pradesh mein panchayati raj ka kriyanavayan: Sagar Sambhag ke vishesh snadarbh mein.** H S Gour. Dr G P Nema, Department of Political Science, Dri Hari Singh Gour Vishwavidyalaya, Sagar.

6. Kamal Manohar. **The Gujjar Tribe of H P: A study in national integration.** HP.

7. Manhas, Verinder Singh. **Ethnicity in politics and administration of Afghanistan since 1979: A study in political geography.** JNU. Prof R C Sharma, Centre for International Organization and Disarmament, Jawaharlal Nehru University, New Delhi.

8. Misra, Dolly, **Ideology and public policy: A study of linkage of mass belief system and the formation of public policy in Orissa.** Berhampur. Dr B B Jena, Ex-Prof, Department of Political Science, Prof Para, Cuttack.

9. Mohapatra, Bijan Kumar. **Stresses and strains in U S - Pak military alliance, 1961-1972.** Sambalpur. Dr L N Mishra, Reader, Department of Political Science, Sambalpur University, Jyoti Vihar, Burla.

10. Moorthy, P. **Politics of the nuclear-weapon-free zones.** JNU. Prof T T Poulose, Centre for International Politics, Organisation and Disarmament, Jawaharlal Nehru University, New Delhi.

11. Nag, Dipakkumar. **Political culture of the tea garden workers in West Bengal.** Calcutta.

12. Raijada, Ajit. **Politics of the Indian Ocean: A critical appraisal.** Vikram. Dr R S Gautam, Mahasweta Nagar, Ujjain.

13. Rajbanshi, Prafulla Chandra. **Change and continuity among the Bodos of Udalguri in Darrang District of Assam.** Gauhati. Dr Anuradha Dutta, Reader, Department of Political Science, Gauhati University, Guwahati.

14. Sen, Sanghamitra. **Participation by women in politics of West Bengal: A case study.** Calcutta.

15. Sharma, Jagadish Prasad. **The Arab policy of Sadat.** JNU. Prof K R Singh, Centre for West Asian and African Studies, Jawaharlal Nehru University, New Delhi.

16. Sharma, Mamtarani. **Madhya Pradesh ka mahavidyaleen shiksha prabandh.** Vikram. Dr Gopal Sharma, Asstt Prof, Department of Political Science, Vikram University, Ujjain.

Economics

1. Ahmed Shah Firoz. **A study of certain analytical aspects of the problem of shortage in socialist economies with special reference to the USSR, Hungary and Poland.** JNU. Prof Arvind Vyas, Centre for Soviet and East European Studies, Jawaharlal Nehru University, New Delhi.

2. Atia Yasmeen. **Economic significance of urbanisation in Bangladesh.** Calcutta.

3. Azad Ahmed. **A study of the financial viability of Local Government in Bangladesh.** Calcutta.

4. Chandakavate, M S. **The scheme to provide self employment to educated unemployed youth: An evaluation study in Bijapur District in Karnataka.** Gulbarga. Dr M S Kallur, Chairman, Department of Economics, Gulbarga University, Gulbarga.

5. George, J. **Dairy development planning in India.** Delhi.

6. George, Jacob. **Determinants of rural household energy consumption pattern.** Osmania.

7. Ghosh, Shankar Narayan. **A comparative study of employment and income pattern of organised and unorganised labourers working in Bailladila Iron Ore Project.** Ravishankar. Dr Hanumant Prasad Yadav, Reader, School of Studies in Economics, Pt Ravishankar Shukla University, Raipur.

8. Gupta, Man Prakash. **Depreciation accounting in automobile companies in India.** Rajasthan. Dr Ravi Kumar Jain, Asstt Prof, Department of Accountancy and Business Statistics, University of Rajasthan, Jaipur.

9. Krishnamma, M. **Socio-economic aspects of female education: A case study of Rayalaseema.** Venkateswara. Dr D Narasimha Reddy, Prof, Department of Economics, University of Hyderabad, Hyderabad.

10. Majumdar, Bhaskar. **Economic planning and industrial growth in India, 1951-1981: Selected internal and external issues and options.** Calcutta.

11. Mishra, Arvind Kumar. **Operational efficiency of co- operative banks in Rajasthan.** Rajasthan. Dr M L Sharma, Department of Accountancy and Business Statistics, University of Rajasthan, Jaipur.

12. Nagaraja, B. **Financing of rural artisans by commercial banks in Chittoor District of Rayalaseem Region.** Venkateswara. Prof L Kothandaram Naidu, 534 Balaji Colony, Tirupati.

13. Raghavendra Rao, A P. **Modernisation of rice mills in Andhra Pradesh with special reference to Alamur Taluk in East Godavari District.** Venkateswara. Prof K Munirathna Naidu, Department of Economics, Sri Venkateswara University Postgraduate Centre, Kurnool.

14. Rajvanshi, Punam. **Profitability of bicycle industry in India.** Rajasthan. Dr Anil Bansal, Asstt Prof, Department of Accountancy and Business Statistics, University of Rajasthan, Jaipur.

15. Ramachandra Prasad, Uppaluri. **Demand for money in India, 1970-71-1987-88.** Andhra.

16. Satish Kumar, M. **The urban labour market in India and the female workforce in the tertiary sector.** JNU. Dr A H Kidwai, Centre for the Study of Regional Development, Jawaharlal Nehru University, New Delhi.

17. Sharma, Hans Raj. **The changing agrarian relations in India: A statewise analysis.** JNU. Prof G K Chadha, Centre for the Study of Regional Development, Jawaharlal Nehru University, New Delhi.

18. Siri Babu, G. **Investment incentives and the industrial development of backward areas: A case study of Chittoor District.** Venkateswara. Dr D Narasimha Reddy, Prof, Department of Economics, University of Hyderabad, Hyderabad.

19. Subbanarasaiah, G. **Industrial sickness in Andhra Pradesh with special reference to Cuddapah District.** Venkateswara. Dr P Prasad, Reader, Department of Economics, Sri Venkateswara University College, Tirupati.

20. Thadikkaran, Raju K. **Transfer of Soviet technology to steel industry in select developing countries.** JNU. Prof Zafar Imam, Centre for Soviet and East European Studies, Jawaharlal Nehru University, New Delhi.

21. Trehan, Alpna. **Dryland technology and its impact on rural economy of Madhya Pradesh with special reference to Indore District.** Devi Ahilya. Dr (Mrs) S Mahalati, Department of Economics, Devi Ahilya Vishwavidyalaya, Indore.

22. Trivedi, Rashmi Chimanlal. **Shahri kishoriyon ko grah karya mein sehbhagitva vishyak abhivrittiyon ka adhyayan.** Nagpur. Dr (Mrs) Kshama Limaye, Head (Retd), Department of Home-Economics, Smt Binzani Mahila College, Nagpur.

23. Vanitha Devi, A K. **Female work participation in A P.** Osmania.

24. Varghese, K V. **A study of occupational aspirations of college students in Ernakulam District as related to their socio-economic background.** CUST. Dr Jose T Payyappilly, Prof, School of Management Studies, Cochin University of Science and Technology, Kochi.

Law

1. Sadhu, Usha. **Juvenile delinquency and juvenile court in the City of Bombay.** Jammu.

2. Sharma, Shyam Vihari. **Amending process in a Federal Constitution with special reference to India.** Ravishankar. Dr N V Paranjape, Department of Law, Govt Hamidia College, Bhopal.

Public Administration

1. Rajendra Prasad, K. **Muncipal Administration in Andhra Pradesh:** A case study of Nellor Municipality, 1965-85. **Venkateswara.** Dr M A Hussain, Reader, Department of Political Science and Public Administration, Sri Venkateswara University College, Tirupati.

2. Venkataswami, N. **Public Administration : Educational administration in Andhra Pradesh from 1956-1976.** Venkateswara. Dr S Sri Krishna, Lecturer, Department of Political Science and Public Administration, Sri Venkateswara University College, Tirupati.

Education

1. Badgujar, A D. **The work value of under graduate students with reference to sex, socio-economic status and faculty.** Saurashtra. Dr H O Joshi.

2. Banda, Sarojana. **A study of the status of women as depicted in the text-books offered at school level in Andhra Pradesh.** Osmania.

3. Bandyopadhyay, Kanailal. **A treatise on the education of the backward classes in India since independence with special reference to West Bengal.** Calcutta.

4. Chhabra, Prem. **Impact of the programme of moral education on non-scholastic aspect of primary school learner's behaviour.** Vikram. Prof R C Gupta, Govt Education College, Ujjain.

5. Debhi, D S. **A study of poetry preference in Gujarati of the secondary school students of Saurashtra.** Saurashtra. Dr M M Patel.

6. Gor, K V. **A study of the effectiveness of microteaching strategies for developing competency of primary teacher trainess.** Saurashtra. Dr H O Joshi.

7. Gupta, Sushma. **A study of deprivation in relation to certain cognitive and non cognitive variables among adolescents.** Jammu. Dr Aruna Suri.

8. Khan, Mohd Akram. **A comparative study of social behaviour, personality traits, anxiety, values performance and other correlates of athletes and non athletes of Rajasthan.** Ajmer. Dr K S Narula, Reader, Department of Education, Regional College of Education, Ajmer.

9. Naik, Sipra. **Development of primary education in Sundargarh District, Orissa with special emphasis on the role played by local leadership.** NEHU. Dr P P Gokulanathan, Department of Education, North-Eastern Hill University, Shillong.

10. Nirmala Jyothi, M. **An evaluation of the nondetention system.** Venkateswara. Dr A Venkatarami Reddy, Reader, Depart-

ment of Education, Sri Venkateswara University College, Tirupati.

11. Obiedat, Abdul Majeed Ahmed Sultan. **A study of Mathematics achievement of 12th grade students on GSCE in IRBID, Jordan in relation to their gender, 1Q, mathematical thinking and SES.** Bangalore. Dr M Khajapeer, Prof, Department of Education, Bangalore University, Bangalore.

12. Raju, Pamu Mohan. **A study of factors contributing to commitment to the teaching profession.** Delhi.

13. Sarma, Emani Sita Rama. **A critical study of the functioning of pre-primary education in coastral Districts of Andhra Pradesh.** Andhra.

14. Shah, S H. **A study of effectiveness of educational programmes for developing skills of thinking.** Saurashtra. Dr N S Donga.

15. Sudha Rani, K. **A study of factors associated with absenteeism among industrial workers in Nellore District.** Venkateswara. Dr B Niranjan Reddy, Reader, Department of Adult Education, Sri Venkateswara University College, Tirupati.

16. Usha, P. **A study of certain social familiar correlates of secondary school science achievement.** Calicut. Dr Kamala S Pillai, Department of Education, University of Calicut, Calicut.

17. Verma, Bipan Chander. **Effect of personalized system of instruction and Bloom's Mastery Learning Strategy on the achievement and certain non-cognitive variables of students promoted by adopting lenient promotion criteria at school stage.** HP.

Commerce

1. Chaki, Jitesh Chandra. **Problems of cottage industry in a backward region of West Bengal: A study of West Dinajpur District from 1951 to 1981.** NBU.

2. Dhar, Samirendra Nath. **Financial institutional holding and corporate financial behaviour: An empirical study.** NBU.

3. Dwivedi, Ratneshwar Prasad. **Rewa Sambhag mein krishi vikas hetu bankon ka yogdan: Ek adhyayan swatantrata ke bad.** Awadhesh. Dr I P Tripathi, T R S College, Rewa.

4. Garg, Kailash Prasad. **Madhya Pradesh mein sehkari kshetra ke vikas mein rajya ka yogdan: Ek mulyanakn.** Durgawati. Dr N K Pandey, Principal, G S College of Commerce and Economics, Jabalpur.

5. Grover, Bhavnesh Kumar. **Social class as a predictor of buying behaviour: An empirical study.** Delhi.

6. Kaistha, Sunita. **Export promotion in India with special reference to the role of EXIM.** HP.

7. Mahajan, Khursheed Ahmad. **A study of cooperative marketing in Kashmir with reference to marketing of apples.** AMU. Prof Mahfozur Rahman, Department of Commerce, Aligarh Muslim University, Aligarh.

8. Mohd Jawed. **A critical study of personnel policies and practices in Oil and Natural Gas Commission in India.** AMU. Prof S Samiuddin, Reader, Department of Commerce, Aligarh Muslim University, Aligarh.

9. Narta, Surender Singh. **Underwriting of capital issues in India: Progress and practices.** HP.

10. Pandey, Arvind. **Pashchim Nimad Jile mein audyogik vikas ka adhyayan.** Vikram. Dr A C Gulati, Department of Commerce, Madhaw College, Ujjain.

11. Sonvalkar, Jayant. **Evaluation of marketing management in State Export Promotion Corporation: A case study of Madhya Pradesh.** Devi Ahilya. Dr D P Mishra, 43, Aggarwal Nagar, Indore.

Home Science

1. Paramjit Kaur. **Impact of nutritional supplements and education on pregnant mothers and newborns.** PAU.

2. Shukla, Kiran. **A study of development of social competence as a function of parental behaviour and peerinteraction.** Ravishankar. Dr V T Sharma, 725, Shanti Vihar Colony, Dagania, Raipur.

Management

1. Franics, C A. **Export development process and potential: A study with special reference to the marine products industry in Kerala.** CUST. Prof N Ranganathan, Director, School of Management Studies, Cochin University of Science and Technology, Kochi.

2. Gupta, Rajeev. **International marketing strategy for Indian bicycles.** Devi Ahilya. Dr R D Agrawal, Coordinator, University Development Board, Devi Ahilya Vishwavidyalaya, Indore.

3. Gupta, Satendra Swaroop. **Credit planning and working capital management of bicycle industry in India.** Rajasthan. Dr Mohan Singh Poonia, Asstt Prof, Department of Accountancy and Business Statistics, University of Rajasthan, Jaipur.

4. Sharma, R G. **Financial appraisal of tea companies in India.** Rajasthan. Prof D C Jain, Department of Accountancy and Business Statistics, University of Rajasthan, Jaipur.

5. Wanjari, Gulab Tulshiram. **Nagpur Jilhateel swarat dhanya dukanachye vyavastheehe va mulya niyantranache tikatmak adhyayan.** Nagpur. Dr P K Gulhane, Dhanwate National College, Nagpur.

Adarsh Education Society's

Arts, Commerce & Science College

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The above post is purely reserved for the S.C./S.T. candidates. If candidate is not available from reserve category, then it will be filled in from open category temporarily.

Applications with full particulars including marks obtained at 1st degree and postgraduate degree etc. with professional qualifications and experience alongwith true copies of testimonials should reach the college office within 15 days from the date of advertisement. Those who are in service should send their applications through proper channel.

K.K. Dube **PRESIDENT**	**Adv.U.T.Rode** **SECRETARY**	**Dr. J.M. Mantri** **PRINCIPAL**

CLASSIFIED ADVERTISEMENTS

JAI NARAIN VYAS UNIVERSITY, JODHPUR

(Establishment Section)

No. JNVU/Estt./T/92/5997 **Dated : 29.5.92**

Advertisement No. 27/92-93

Applications are invited on the prescribed form obtainable from the Office of the Registrar, JNV University, Jodhpur on payment of Rs.10/- either in cash or through crossed Indian Postal Order payable in favour of Registrar, JNV University, Jodhpur alongwith self-addressed envelope of 27 x 12 Cms. size affixing Postal Stamps of Rs.8/- for the following posts so as to reach the undersigned on or before **15-07-1992.** However, the last date for supply of application form by post is 07-07-1992. Applications received after due date shall not be entertained.

Department	No. of posts	Nature of Vacancy	Category		
			Gen.	Sc.	ST
FACULTY OF ENGINEERING :					
1. Computer Science and Engineering Assistant Professor Rs. 2200-75-2800-100-4000	3	State Plan	2	1	—

QUALIFICATIONS:

Ist Class Bachelor's degree in appropriate branch of Engineering/Technology.

PROVISO :

The modifications in qualifications for appointment of University Teachers in the Faculty of Engineering as intimated by the All India Council of Technical Education New Delhi from time to time be adopted and made applicable.

General conditions etc. will be supplied to candidates alongwith application forms.

The University reserves the right to increase or decrease the number of posts. The University also reserves the right not to fill any or all posts if deemed necessary.

REGISTRAR

Nirmala Institute of Education

Altinho, Panaji, Goa, 403001

Invites applications from the qualified candidates for the following posts.

I. **Principal: Qualifications** - Good academic record with at least 55% marks or an equivalent grade for the M.Ed. degree and ten years teaching experience as a full time lecturer in a teachers' training degree college after acquiring the requisite qualifications.

Pay Scale : Rs.3700-5700. Candidates should apply to the Vice-President, Nirmala Education Society, within fifteen days from the date of publication of this advertisement.

II. **Lecturer: Qualifications** - Good academic record with at least 55% marks or an equivalent grade for the M.Ed. degree and a pass in the eligibility test for Lecturers conducted by U.G.C., C.S.I.R. or similar test accredited by the U.G.C. Special Methods History, English for the B.Ed. degree is desirable.

Pay Scale: Rs.2200-4000. Candidates should apply to the Principal, Nirmala Institute of Education, within fifteen days from the date of publication of this advertisement.

No. T.A./D.A. will be paid for appearing before the Selection Committee for both the posts.

Miss Theresa D'Souza
Vice-President

AWADHESH PRATAP SINGH UNIVERSITY, REWA (M.P.)

ADMISSION NOTICE

Admission are open in the following courses offered by the University for the academic year 1992-93.

1. M Phil. - Environmental Biology, Chemistry, Physics, Mathematics, Bus.Economics, Psychology, Anc.Indian History, Culture & Archaeology and Policy Research.
2. M.Sc. - Environmental Biology, Chemistry, Physics, Mathematics.
3. M.A. - Mathematics, Business Economics, Ancient Indian History Culture & Archaeology, Psychology, Russian Language.
4. Bachelor of Physical Education.
5. Part Time Certificate, Diploma & Advance Diploma Course in Russian Language.
6. Certificate & Diploma courses in English language.

Note:1- The application forms can be obtained from the concerned Head of the university teaching Department on payment of Rs.15/- in person or through Regd. post on payment of Rs.30./- through a Demand Draft drawn in favour of the **Registrar, A.P.S. University, Rewa and a self-addressed envelope of size 28 x 10 cms.**2. The minimum qualifying marks is atleast 55% marks at postgraduate level in concerned subjects for M.Phil.; 50% marks for science subjects and for Social science and Arts subjects is 45% in theory papers. The detailed rules relating to admission indicating qualifications etc. will be supplied alongwith the application form.

The candidates who are appearing at the qualifying main examination of 1992 may also apply for the admission in concerned courses.

3. Courses are being organized on semester basis.
4. Limited Hostel facilities are available for boys and girls separately.
5. Last date for receipt of application form is **30-6-1992.**

M.P. Agnihotri
REGISTRAR

REFERENCE AND RESEARCH TOOLS

BIBLIOGRAPHY OF DOCTORAL DISSERTATIONS

Invaluable reference for those seeking to register for a Doctoral Programme

The bibliography is classified by subjects and covers all the disciplines in which a doctoral degree is awarded by the Indian Universities. Each entry gives complete bibliographical details, viz., name of the research scholars, title of the thesis, university/institute where the research was conducted, years of registration and award of degree, availability note — whether the thesis is available in the university library/department concerned/university office and the name and complete address of the guide/supervisor.

Comprehensive and exhaustive as the bibliography is, it not only reports the research being conducted at the university centres, but also includes research work done at the institutions of national importance, like the IITs, institutions deemed to be universities, like the Indian School of Mines, CSIR Laboratories as also the research establishments connected with ICAR and ICMR.

The bibliography is indeed a measure of the research output of the country.

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Address Enquiries to:

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Association of Indian Universities
AIU House, 16 Kotla Marg, New Delhi - 110 002
Telephones: 3310059, 3312429, 3313390, 3312305
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GRAM: ASINDU

INSTITUTE OF CORRESPONDENCE COURSES
Sri Venkateswara University : Tirupati

ENTRANCE TEST FOR DIRECT ADMISSION INTO BA/B.COM, MA/M.COM.

The Institute of Correspondence Courses, Sri Venkateswara University offers B.A./B.Com. and M.A./M.Com. Courses of study through Correspondence under the regular stream (with formal education) and Open University system (without any formal education). Admission into courses under Open University system is thrown open to all without insisting on any basic educational qualifications. The only requirement is completion of minimum prescribed age and pass in the Entrance Test. The applications for Entrance Test for direct admission into B.A./B.Com. and M.A./M.Com. for the academic year 1992-93 are invited.

COURSES OFFERED

COURSES	SUBJECTS	MEDIUM
B.A.	All combinations	Telugu, English
B.Com.	Commerce	Telugu, English
M.A.	English, Indian Culture, Economics, Political Science Public Administration, Philosophy, Sociology and History	English
M.Com.	Commerce	English

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No prerequisite educational qualifications are required but a candidate who will complete 20 years of age on 12-8-92 for B.A/B.Com. and 25 years on 12-8-92 for M.A./M.Com. is eligible to appear for the Entrance Test. Candidates seeking admission into B.A., B.Com. courses may appear for the Entrance Test either in English medium or Telugu medium.

EXAMINATION CENTRE : Sri Venkateswara University College of Arts & Sciences, Tirupati.

DATE OF THE ENTRANCE TEST : 23-8-1992

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Candidates can obtain applications from the Director, Institute of Correspondence Courses or from Special Officers, P.G. Centre at Kavali, Kurnool and Cuddapah by person through the payment of a Demand Draft for Rs.20/- for B.A./B.Com. and Rs.40/- for M.A./M.Com. drawn in favour of the Director, Institute of Correspondence Courses, S.V.University, Tirupati. Those who want to get the application by post, should also send a self-addressed stamped (Rs.5/-) envelope 10" x 22" size to the Director, Institute of Correspondence Courses only. The last date for procuring an application by post is 25-6-1992.

LAST DATE FOR RECEIPT OF FILLED IN APPLICATIONS

The filled in applications should reach the Director, Institute of Correspondence Courses on or before 25-7-1992 without fine and 12-8-92 with a fine of Rs.25.

Dr. G. Savaraiah, M.A., Ph.D.
DIRECTOR

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ISSN [illegible]

University News

MONDAY, JUNE 22, 1992

Rs. 5.00

North Bengal University

Main Administrative Building

Hosts to AIU Standing Committee Meeting and
East Zone Vice-Chancellors Conference, 24-25 June, 1992

Classified Advertisements

UNIVERSITY COLLEGE OF MEDICAL SCIENCES & GURU TEG BAHADUR HOSPITAL,

SHAHDARA, DELHI - 110 095

Advertisement No. MC/Estab./2/11/92-V

Applications on the prescribed form are invited for the following Teaching Posts to reach latest by **15.07.1992.**

1. **Professor** : Rs. 4500-150-5700-200-7300. One post for the Deptt. of Paediatrics*;

2. **Reader** : Rs. 3700-125-4950-150-5700. One post each for the Deptt. of Pathology*; Dermatology & STD.

3. **Lecturers** : Rs. 2200-75-2800-100-4000. One post each for the Deptts. of Pharmacology*; Microbiology*; Forensic Medicine (Temp.)*; P.S.M.*; Surgery; Orthopaedics*; Opthalmology; Obst. & Gynae.; Dentistry (Temp.). Two posts each for the Deptts. of Paediatrics* and Radiology* out of which one post in each deptt. in Temp.

4. **Sr. Resident/Sr. Demonstrator** : Rs. 3150-3350. One post each for the Deptt. of Anatomy; Pathology; Microbiology; Forensic Medicine; P.S.M.; Derma & STD; Opthalmology; E.N.T.. Two posts each for the Deptt. of Medicine; Surgery & Physiology. Four Posts for the Deptt. of Pharmacology. Upper age limit is 33 Years.

E.Q. Professor, Reader and Lecturers : P.G. in the subject concerned as included in the Schedules of Medical Council of India Act 1956/Ordinance XXIV of the University of Delhi. For Non-Clinical Departments persons possessing M.Sc. with Ph.D./D.Sc. in the subject concerned will also be eligible. E.Q. for Sr. Resident/Sr. Demonstrators : P.G. Degree or Diploma in the subject concerned.

Experience in a Medical College : **Professor** : 5 years as Reader/Associate Professor; **Reader** : 3 years as Lecturer/Asstt. Professor; **Lecturer** : 3 years as Demonstrator/Tutor/Registrar/Resident out of which one year after P.G.

*All those candidates who have applied for any of these Posts in response to earlier advertisement of the College appearing in April 1991 and for which Selection has not so far been held, need not apply again. However, they may intimate the College if they still wish to be considered, in which case they may, if required, up-date their Bio-data.

All posts carry usual allowances at the rates prescribed by the University from time to time.

The prescribed application form can be obtained from the Office of the University College of Medical Sciences & Guru Teg Bahadur Hospital, Shahdara, Delhi - 110 095, personally or on written request alongwith a self-addressed envelope of size 28 cm. x 13 cm. with postage stamps worth Rs. 3/- referring to Advt. No. MC/Estab./2/11/92-V. The cost of one form is Rs. 2/- which can be sent, if required, by post, by Indian Postal Order drawn in favour of the Principal, University College of Medical Sciences, Delhi - 110 095.

PRINCIPAL

THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA

Notification No. ADE/3 of 1992-93

Applications are invited for the following posts in prescribed forms which can be obtained from the University Office on or before **30-6-1992** by sending a request to the Ag. Registrar, M.S. University of Baroda, Vadodara - 390002, alongwith a self addressed envelope of size 30 cms x 12 cms. accompanied with a draft drawn in favour of Registrar, M.S. University of Baroda of Rs. 50 (Rs. 15 for members of Schedule Caste and Schedule Tribe) or by payment in cash at the Receipt Counter of University Office for the same during working days only between 11.00 a.m. and 2.00 p.m. No amount will be accepted either by M.O. or by Postal Order, except in cases of SC/ST who can send Postal Order of Rs. 15.00 or pay the amount in cash as stated above. The SC/ST candidates will furnish a copy of the certificate to that effect at the time of requesting for application form. The SC/ST candidates coming from outside Gujarat State shall have to produce a certificate from the competent authority of the Gujarat State mentioning that the Gujarat State has recognised them as SC/ST for the purpose. (The amount of Rs. 50/- and Rs. 15/- includes the cost of application form and the Application Fee).

Faculty of Management Studies :

1. Professor of Management Studies (Human Relations & Personnel Management) – One UGC Post
2. Professor of Marketing – One Post
3. Lecturer in Management Studies (Methods/System) – One UGC Post
4. Lecturer in Management Studies (International Business) – One UGC Post
5. Lecturer in Management Studies (Organisational Behaviour) – One UGC Post

Scale of Pay

(1)Professor : Rs. 4500-150-5700-200-7300
(2)Lecturer : Rs. 2200-75-2800-100-4000

The application forms duly completed in all respects alongwith necessary enclosures should reach the AG. Registrar, M.S. University of Baroda, Vadodra - 390002 on or before 15-7-1992.

AG. REGISTRAR

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UNIVERSITY NEWS

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Editor :
SUTINDER SINGH

University of North Bengal

A Write Up

University of North Bengal, Raja Rammohunpur, Dist. Darjeeling, hosts the AIU Standing Committee Meeting and East Zone Vice-Chancellors Conference on June 24 & 25, 1992.

The University of North Bengal was incorporated under West Bengal Act XXVII of 1961. It came into existence when Prof. B.N. Dasgupta, FCA, Formerly Dean of the Faculty of Commerce of Lucknow University, assumed charge of the University as its first Vice-Chancellor on 1st June, 1962. The University was formally inaugurated at its present site on 1st November 1962. The campus was taken over by the Indian Army on the same day. The University found a temporary abode in the Hostel Buildings of Siliguri College till its return to the campus in January, 1964. The University Act of 1961 was substituted by another Act formulated by the State Legislative Assembly in 1981.

The campus of the North Bengal University is located at the foot-hills of Darjeeling. It is 3 kms off Bagdogra Airport towards Siliguri Township and stands in pictursque beauty on the left of N.H. 31. The total landed area of the campus is 330 acres approximately which is perhaps one of the biggest campuses amongst the Indian universities. It is about 10 kms towards Bagdogra Airport from the main township of Siliguri, a sub-division of the Darjeeling District.

The University started with six postgraduate teaching departments in English, Geography, Political Science, Economics, Physics and Mathematics. Postgraduate Departments of Botany and Zoology were located at the Govt. College, Darjeeling. The Department of Chemistry was started in March, 1963. Akshaya Kumar Maitreya Museum was established in 1965. The Departments of Bengali, History and Commerce came into being in 1966, Department of Philosophy in 1968. The Department of Sociology & Social Anthropology was started in 1976. The year 1977 marks an important landmark in the development of the university with the establishment of the Department of Nepali for postgraduate teaching in Nepali language and literature – the first of its kind in India and of the Centre for Life Sciences as a Research Centre. The Centre for Himalayan Studies, a centre for interdisciplinary research under the Area Studies Programme of the UGC, was set up in 1979. Another important development was the decision of the Department of Atomic Energy to transfer the Magnetic Spectograph Laboratory from the Regional Engineering College, Durgapur to the Department of Physics. A Research Service Centre with a micro-computer was established in the same year. The University Service and Instrumentation Centre came into existence in 1979 as a central facility for the repair and maintenance of costly equipments as also for fabrication of new instruments. In the year 1991, the UGC has approved upgradation of the USIC to level II. During the VIth Plan, assistance from the UGC and DOE enabled the University to instal one 'C' level computer and introduce a one-year post B.Sc. diploma course in Computer Science and Applications. The Research Service Centre was upgraded to the Computer Centre in 1986 with additional grants from the UGC. It is also to be noted with gratification that the University could open the Department of Master of Computer Science & Applications with the assistance of the UGC and State Govt. from session 1987-88. At present 30 students are taking instructions in the MCA course. Assistance from the UGC and the State enabled the University to start postgraduate teaching in Botany and Zoology at the Centre for Life Sciences from the session 1983-84. Subsequent years have seen more additions to the teaching programmes, for example, the course of Bachelor of Library & Information Science started from the 1990-91 session in the afternoon as a self-financed scheme. Another similar course has been the Coaching Centre for Higher Services competitive examinations which has been introduced from 1991 also in the afternoon/evening period. Self-financed short-term certificate courses are conducted by the Computer Centre. Certificate courses in electronics, micro-processors are conducted by the USIC too. A Centre for High Energy & Cosmic Ray Physics has been established in 1990 incorporating within it the Regional Research facility in High Energy Physics sanctioned by the UGC and concurred upon by the State Govt. Grants from the UGC and State Govt. have enabled the University to accommodate about 80% of the teachers in residential quarters. The number of quarters for the non-teaching staff and the officers are, however, very few.

At the undergraduate level, the University started with 16 affiliated colleges spread over the five districts of North Bengal in the faculties of Arts, Commerce, Science, Engineering & Technology. With the annexation of the State of Sikkim to Indian Union, the jurisdiction of the University was also extended to cover that region with the amendment of N.B.U. Act 1961. The first MBBS course was started in temporary accommodation within the university campus in 1968-69. In 1973 the University Medical College shifted to its own building on its campus at Shushrutanagar for teaching the preclinical course. The Medical College was taken over by the Government of West Bengal under its control and management in 1978. The MBBS degree of the University was awarded to students of North Bengal Medical College. The College obtained permanent recognition of Medical Council of India in 1986. The University College of Law was established in 1974. The total no. of affiliated colleges today is 54 in the undergraduate streams of Arts, Commerce, Science, Education, Physical Education, Law, Engineering and Technology and Medicine and Dentistry. There is one constituent college with facilities of teaching of both undergraduate and postgraduate courses and three university colleges.

Over the years, the University has been actively disseminating current knowledge through teaching and exploring the frontiers of knowledge through research. If one takes into account the amount of investment possible on our laboratory equipments and infrastructure, the research output of the faculties has been quite impressive. Besides, 370 scholars have been successfully guided for the Ph.D. degrees of the University – 163 in Humanities and Social Sciences, 207 in Physical and Life Sciences and Engineering. A number of the dissertations relate to problems that touch the lives of the people of the area or study their physical and social environment. It is a pity that the study of the men, institutions and the environment of this frontier is confined to archives of the Library. The Publication Bureau of the University could bring out the more significant studies in print for scrutiny by specialists and as guides to policy if it had adequate funds. With its meagre resources, the Bureau has been trying to bring into light as many of such endeavours of the teachers and scholars as possible. The University has to its credit only 19 published works at present.

1,22,035 students were awarded the first degree of the University in different faculties upto 1991. The Master's Degree was won by 6,686 students upto 1990. Many of our products have been able to hold their own in national and international tests.

There are at present 179 teachers, 38 officers and 561 employees in position.

Statistics can never be accepted as a true index of the quality of any endeavour. But at the same time statistics help us in understanding the nature and dimension of the services put in by various departments in development process of the University.

The Centre for Himalayan Studies has kept focus of study and research on Eastern Himalayas. Besides publication of the Himalayan Miscellany, the Journal of the Centre, the centre has published its project findings in the form of occasional papers. The documentation cell of the Centre, too, has kept itself engaged in its activities like accession, publication, press-clippings and library services.

All the departments under the Faculty of Arts, Commerce and Law are engaged in M.Phil programme.

The syllabi in different subjects taught at the undergraduate level have been revised and updated through workshops and seminars participated by teachers of both the postgraduate departments and the undergraduate colleges affiliated to the University.

The Govt Engineering College at Jalpaiguri and the North Bengal Medical College have been functioning

14 JUL 1992
C.F.T.R.I. MYSORE

well in perfect collaboration with the University. Courses in Electronics and Computer Science were newly added to the syllabi of the Engineering College as additional subjects while postgraduate studies in selected subjects in our Medical College are to be introduced very soon with approval of the Medical Council of India and concurrence of the State Govt.

The University has a centre for Adult and Continuing Education which is run with UGC assistance. The Centre runs 150 centres located throughout the region of North Bengal. It assists various districts in the eradication of adult illiteracy programmes. It also endeavours to conduct self-financed courses based on continuing education and extension programmes.

The University received sanction of the UGC for the construction of a Gymnasium under the National Sports Organisation Scheme. The preliminary works have been done and the construction will commence very soon. The Sports Board of the University in addition to inter-college tournaments/meets in Athletics, Cricket, Volley Ball, Table-Tennis and Badminton has organised several zonal and Interzonal meets in Athletics, Cricket and Badminton. The University Sports Board also conducted East-Zone Inter-University Badminton Tournament (Men and Women) for the year 1991-92 in which the North Bengal University team put up an excellent performance.

One wonders if the University has really acted as a catalyst for the spread of higher education in North Bengal. Quite a few of the affiliated colleges offer instruction only at the pass course level and that too in Humanities and Social Sciences only. Higher education profile of North Bengal does not seem to be the result of a careful design but of unplanned growth. Opening of new courses of study particularly in Science and Commerce streams, upgrading colleges through honours subjects may be considered as policy alternatives to the opening of new colleges in Humanities oniy with poor infrastructure.

The University of North Bengal has got to involve itself in fulfilling the aspirations of the people around. This part of the country has remained underserved for long and time has come for all concerned to give proper and timely attention to solve the social needs of our people. It is in this context, that the University has directly addressed itself to popularisation of science, removal of illiteracy and creating environmental awareness and the services rendered in this respect by the teachers, officers and non-teaching employees of the University are commendable.

Students coming from remote regions covered by the University have no avenue to equip themselves for entrance to the jobmarket. It was, therefore, felt that a few job-oriented disciplines should be introduced in this University. Any expansion, however, puts severe strain on our resources and unless timely help is available for additional faculty support both from the University Grants Commission and the State Government it is impossible to give shape to our hopes and aspirations. The University has, of late, started coaching centres for WBCS Examinations to enable the students of this region to compete with others for entry in State Govt. services. We hope that in future with the removal of resources constraints, it will be possible to start coaching centres for All India Services Examinations also.

Problems of space has been haunting us for long and we started in right earnest to go with the process of having a few more buildings to provide minimum space to the faculties but we had to cry a halt to it for the flow of funds stopped in the meantime and the half-finished buildings stand there on the Campus, only as so many marks of our unfulfilled hopes and desires.

The University is almost a residential one and so hostel facilities need to be increased furthur. At present there are three hostels each for the girls and boys. Some funds have been allotted during the 8th Plan for construction of one additional hostel each for the girls and boys.

It was contemplated to introduce some new courses during the 8th Plan period, namely, Postgraduate courses in Geology and Sanskrit. A School of Languages was also proposed. These schemes were also approved by the UGC under Part-II. Recently, however, the UGC has decided to withhold sanction of funds for all the schemes under Part-II. This decision has shattered all hopes and aspirations for expansion and diversification of the University. The University wishes that it was spared of the shock that this decision poses.

To conclude, we may recall the goal set for the University by its founding father, late Dr. Bidhan Chandra Roy as expressed by our first Chancellor, late Smt. Padmaja Naidu in her illuminating address at the 2nd Convocation of the University.

'It was the prophetic eyes of the creator of modern Bengal, Dr. Bidhan Chandra Roy, that saw a vision of this University that he had founded gradually evolving a rich synthesis of all the different cultures and customs and traditions and art and craft of this region and ultimately becoming a great centre of national integration.'

Internationalisation of Education

C.R. Mitra*

I. **Domain** : Post Secondary Education and Training

Focus : Professional Education

Definition : Internationalisation is an activity mainly involved in :

a) Generation of basic knowledge and applied knowledge
b) Building of institutions to transmit and diffuse knowledge. It is an organisational function for stated goal

Process : a) Transfer between donor and recepient
b) Design of appropriate institutions by the recipient

Valuation : The activity and the process are considered to be necessary and good

Unresolved Issues :
(i) Training-education hiatus
(ii) Theory-practice divide
(iii) Patronage and structure of institutions

II. Evolving Functions and Contours of Universities

a) *Ancient Universities* :

Primarily to train professionals in theology, medicine and law.

b) *17th Century European Model* :

- Liberal Education in Universities
- Professional Education outside Universities.

Ideal is to contain the youth and impart one time training or education. An extension of the British Private School Environment.

c) *19th Century (1806) University of Berlin* :

A daring innovation by Humbolt to provide for successive generations of intellectual leaders.

d) *The American Amplifications* :

60 years after formation of University of Berlin, USA created a galaxy of universities, inspired by Humbolt's innovation but giving an unusual spectrum of shapes and functions. The features could be listed as below :

- Scale of operation
- Variety – from residential to open
- Professional Education restored back to university
- Massive Coop Education
- A change in the concept of "Liberal Education"
- No Ministry of education or UGC controlling the destiny of universities
- Access to life-long learning and relearning
- Closed to gap between training and education
- Patrons – State, private and corporate
- Fundamentally, highly structured but with a wide variety of flexibilities
- Centralised planning, administration and fund raising
- Entrepreneurship and innovation
- Awareness of market forces and respect for management techniques as in business organisations
- Frankly aimed to provide intellectual leadership and to act as change agents

III. Sketch of the Developing Countries

- Began with a total transplant of both activity and process. Only a partial change in attitude discernable now.
- 'Sameness' rather than 'differentness'
- Unable to address relevance issue.
- North-South dominance over South-South linkages.
- Hovering between 17th century European model and contemporary American models.

IV. A Challenge and a Necessity

Clearly it is not possible to span decades and even centuries in one brief moment. Issues need to be focussed and priorities determined on the basis of given conditions.

(Contd. on page 11)

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Quest for Indianness in the Educational Policy Document

R.S. Trivedi*

The Central Theme of the NEP Document

The policy statement starts with the introductory remarks viz. "Every country develops its system of education to express and promote its unique socio-cultural identity and also to meet the challenges of the times. There are moments in history when a new direction has to be given to an age old process. That moment is today".

Standing at the cross-roads, we the people of Indian Republic are eagerly looking forward to a signboard with a new direction. What is this age-old process? How do we identify it? The NEP Document also stresses that the young will be encouraged to undertake rediscovery of India. What is this rediscovery? Is it rediscovering the age-old process? Is it similar to Pandit Nehru's 'Discovery of India'? Expressions such as "awareness of the rich cultural identity", "curriculum to be enriched by cultural content", indicate that seeking cultural identity is the pre-requisite in remoulding educational system. Is cultural content a real rediscovery? Is it the identification of the age-old process?

Lamenting the erosion of long-accepted values, the Document says, "the coming generations should have the ability to internalise new ideas constantly and creatively. They have to be imbued with a strong commitment to human values and to social justice". All this implies "better education". This sentiment has been ultimately summed up in the Document in only three words viz. *Quality*, *Equality* and *Relevance*. Therefore in the context of the sentiments expressed, "*Quality*" means human qualities with human values; "*Equality*" means all without distinction to be treated equally to enable them to grow and develop as an individual; and "*Relevance*" means the contextual age-old process of discovering the indigenous culture of this great Nation. Better education in this context means education, the process and methodologies be imbued with the human values and social justice as desired by this Nation, sequential to her Freedom Struggle. This is the signboard placed on the cross-roads. This is the new direction. The NEP in clear terms expresses that "Education" as an institution and as a system has to be taken in the direction shown.

Unfortunately the Action Plan prepared seems to have remained quiet on the new directions of the new sign-post on the cross-roads. People, therefore, as is natural to them, will tend to interpret the words and phrases as it suits them. Bureaucracy is trained to suit the establishment. Hence the bureaucratic interpretation of the NEP will remain establishment oriented i.e. pattern maintenance. A new vigour and new nourishment is not expected of the Bureaucracy. Rediscovery of India is beyond the reach of the Establishment.

The way to rediscovery of the age-old process expressed in the Document is to be spelled out by educational reformers so as to realise the faith expressed by the Document. It adds "given our tradition which has almost always put a high premium on intellectual and spiritual attainment, we are bound to succeed in achieving our objectives". The Document, thus, puts a high premium on the intellectual and spiritual attainment. Is this the signal to rediscover India? What new direction do we wait for the intellectual and spiritual attainment of which this country is proud of? Is this the cultural heritage we are referring to as a part of core-curriculum?

Philosophy of Indian Sociology – A point of view

Mere structural change of 10+2+3 or 8+2+3 has no meaning. It can never enable us to achieve the desired goals. What is required is a change in structure and not structural change. Those who are interested in the human development through education in the context of cultural heritage need not be confused because of the western concept of society in its separate identities. Daniel Bell, author of "*Coming of the Post Industrial Society*" speaks of social structure, polity and culture as three distinct identities of a society. Indian viewpoint is holistic. All the three dimensions of society are to be viewed as an integrated whole. The axial principles of the three dimensions according to Dr. Bell are different but these axial principles are to be woven into the social fabric with a common value system. Syncretism is the ideal. This was the cultural ideal in India in the past. This is

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true even today. This ideal has not outlived its utility. It is still modern. This, in fact, is a part of our cultural heritage. This is an attempt to rediscover India. Recognizing the ideal of syncretism and adjusting individual and institutional behaviour accordingly, is the way to rediscover India. This has to be reflected in Action Plan. Message of India is that Humanity is one. This is also a unique Indian value. Indian Culture has recognized no smaller groupings than mankind. Indian Sociology, therefore, has to be shaped on Indian mode of thinking. Philosophy of Indian Sociology is different. Education to be true has to take Philosophy of Indian Sociology as its foundation. With Indian Culture it is compassion for all beings. Our approach has remained comprehensive but our practice unfortunately has fallen to a low level.

This stage of low level is due to the artificial grafting of an alien educational plant on the indigenous soil. The educational system, existing as it is, does not respond to the idiom of the soil. India is still seen by even Indians from the western point of view. India viewed in this context appears to be other worldly, fatalistic and even unegalitarian. It is in this context that India is to be rediscovered. We should remember a note of caution that rediscovery is not equivalent to revivalism.

In fact, modernity and tradition are not dichotomous, at times, they may be dialectical in relationship. The components of the new may exist among the old.

Mahatma Gandhi – A Symbol of Cultural Synthesis

Mahatma Gandhi is a living example of a synthesis between modernity and tradition. It is difficult to place him entirely in old society or entirely in new society. Even the NEP Document in para 5.42 makes a statement on the revolutionary ideas of Mahatma Gandhi's education. Mahatma is looked upon as a revolutionary. The only surprise is that institutions based on his revolutionary ideas are to be treated in an isolated conclave. It is revolutionary and indigenous. The entire NEP Programmes are to be channelised accordingly. This will surely establish the link with the cultural heritage of India. Gandhiji's ideology, his method, his conceptual stress on peace, non-violence, asceticism sound other worldly but in reality he gave new meanings to the old concepts. Mahatma thus became harbinger of Modern India, Father of the Nation in true spirit. As a true activist he harnessed the old concepts in the new light to give a mass movement whose goal was independence, coherence and self-esteem. These are new Indian values. Even a futurologist like Alwin Toffler in his "*Third Wave*" recalls Gandhi. His chapter on "Gandhi with Satellite" speaks of Gandhi's relevance in the age of electronics. Work ethics and technology go hand in hand. It is, therefore, desirable that the NEP Action Programme carefully nurtures these old concepts and values with its new interpretation. This is the way to internalise new ideas constantly and creatively. Mahatma Gandhi showed the way of internalising new ideas creatively.

The very concept of Satyagraha which is very much distorted by us, was not a mere mobilization of numbers. In fact, it was a means to awaken the best in one's opponent. What higher value do we expect than this? The Mahatma organised Satyagraha in relation to modern problems like textile workers' strike, tax relief, untouchability and communal disturbances.

Mahatma Gandhi's education was based on the basic indigenous cultural concepts and hence it is Basic Education. Self-control, self-suffering, self-expression and self-reliance were the concepts he attempted to translate in his educational programmes. In fact, the entire Freedom Struggle Movement, that he led, was education. Unfortunately his laid down pattern of education today is converted into a sort of cult to be protected in seclusion by those who claim to be adherents of Gandhism – in reality, there is nothing like Gandhism. Mahatma, in fact, showed that tradition and modernity are not dichotomous. Mahatma Gandhi's greatest contribution to political modernization was a national coherence and identity, to become a nation by showing a way to courage, self-respect and political potency. Gandhi's approach to traditionalism was from a reformist point of view. Gandhiji's norms of life demonstrated the indigenous life pattern. Unfortunately these norms have remained at the rhetorical level only.

Values we owe to the Freedom Struggle

"*Satyam ev jayate*" the upanishidic axiom reflects the value for which the Nation stands. The spirit has been forgotten. Nobody bothers that there is National motto. Isn't this an Indian value worth introducing in the educational behaviour? This has to be reflected in the core curriculum. Freedom Struggle Movement is full of values. It reflects the sense of sacrifice. It illustrates the spirit of renunciation and service to the community and the Nation.

Women emancipation is the most glorious illustration that the Freedom Struggle Movement has demonstrated. This cannot be compared with the artificiality of Women's Lib movement in the West. Freedom Struggle Movement is not to be treated as a mere political fight. It is a struggle for the entire Nation's being. It was to awaken the Nation's ego. Realizing the National ego is the real rediscovery. Freedom Struggle Movement stresses the only kind of "service" worth the name and that is disinterested service; the rest is not service but bargain driving. This is the spiritual aspect of the value or service. If we understand the values displayed by Freedom Struggle Movement and internalised them then only we have moral justification in celebrating the 15th August as a Day of Independence.

Rediscovery of India through the Freedom Struggle

In the context of the prevailing reality, could we confidently say that we are independent? In every walk of life we have become dependent. Even for simple community service we rely more on the Government, the power, the authority. Resources of voluntary agencies have dried up. They look to the Government aid. Instead of becoming independent and service prone-community we have become dependent and helpless. This sort of attitude has left with us only two institutions viz. (1) Government, and (ii) Religion. Could we say then that ours is a democratic Republic? We have forgotten the lessons of the freedom struggle.

The ideal world of 'mankind' and 'humanity' that the people of this country were wedded to has been replaced by the scientific and technological unified material world. In a standardized, mechanized material world, Indian ideals of 'mankind' and 'Compassion for all living beings' have to be stressed, nurtured and internalised. This will substitute 'collective ego' of the material world by the 'human ego'. We have to revive this ideal as a part of cultural heritage.

Education as an institution for human resource development has to adopt the principle of "renewal of energy", reinterpreting the past by accepting the values that Freedom Struggle Movement imparted to us irrespective of caste, colour or creed. This is the true foundation of secularism. If this finds expression in the educational institutions, NEP as a national system of Education really becomes Indian in spirit.

Let's take a lesson from the Freedom Struggle Movement and let's be Indian and maintain Indianness in our institutions. Quoting incessantly a few phrases from the Policy Document and clinging to the almost collapsing educational structure will not take us an inch forward from the cross-roads square.

Do we want to prove that in the midst of a large illiterate mass we are another class of illiterates unable to read the signboard at the cross-roads?

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Absenteeism or Classtrophobia?

Some Causes and Cures

Shirish V. Chindhade*

If Dr. Kothari of the illustrious Education Commission of 1964, were to visit today any of our senior colleges in any part of the country, he would speedily recant his observation that "the destiny of India is being shaped in her classrooms". Degrees are often conferred *in absentia* at various convocations but he would wonder how instruction is also now possible in institutions of formal education while the 'instructed' are not to be sighted in the classrooms. In other words, the destiny of India is being shaped or mis-shaped outside her classrooms nowadays! "You cannot step twice in the same river," observed once a Greek philosopher to spell some profound principle of human life. On a very mundane level the latter-day college teacher will say, you cannot face the same class twice, as the audiences show a predilection for floating and flowing out of the classrooms. In consideration of this situation causing concern to the concerned, an attempt is made in this note to investigate into some of the causes of the phenomenon of mass absenteeism on the part of the students, by raising certain relevant questions.

However, Dr. V.V. John has said in the delightful essay "*Interview*" that "any fool can ask more questions than a wise man can answer them". Therefore, to bypass the former appellation in the quotation, an effort is made here not only to raise questions but to suggest answers also to some, if not all, of them. Of course, by no means these can be the final answers and detailed ones either.

1. Are the Courses Relevant?

Barring the curricula in science, technology, engineering, medical and professional education (for Chartered Accountants, Company Secretaries, Legal Practitioners, etc.) a number of courses in the other faculties are irrelevant to the felt needs of the students and of the various jobs they are likely to take up later on. This observation particularly pertains to the Commerce courses because they are thoroughly expected to be linked with the practical needs of life, unlike the Arts courses which are essentially of the nature of liberal education designed to impart pure knowledge. Observations based on experience and research do not suggest that a Commerce graduate is a better hand in a Bank or a Business Firm than a graduate in Arts or Science. As a matter of fact, the reverse situation predominates.

2. Are the Courses Challenging Enough?

Although we believe in theory that change is the law of nature, in practice we find that it is not a law that governs human nature, for it is a common experience that human nature is averse to change; and if the change is of a challenging type the conservatives raise a hue and cry against it. In Maharashtra, the Text Book Bureau had contemplated a change in the history syllabus at the third standard but had to recant and revert to its earlier prescription in force for decades in the face of uncompromisingly hostile opposition. Ironically and unfortunately the resistance came mainly from the teachers. The point is that repetitive and brittle courses that suffer from thinness of content are favoured at all levels as they guarantee slothfulness to the concerned. One senior doctor in Pune has shouted hoarse for a useful revamping of syllabus at the 1st MBBS course but his has been only a solitary cry in the wilderness.

As a corollary if the syllabi and the curricula are unchallenging, the examinations will be all the more so, not to mention at all the evaluation of the answer scripts. It is like water finding its level : down, down, down. Professedly a majority of the answer scripts in themselves do not make sense; it is entirely the examiner's art and responsibility to decipher the hieroglyphs and read sense in them kindheartedly! This is amply proved by the crowded *melas* at various convocations.

3. Do the Teachers Have Pedagogic Talent?

It is believed – and is true to a certain extent – that like poets, teachers are also born. This is really not to suggest here that the formal training of teachers is futile and ineffectual. What it definitely means is this that to be a teacher worth the name is to have a natural predilection and love for being one, the same way as one cannot be a good nurse without a sense of service and a sense of caring for others. If teaching is not interesting and convincing enough, it is not relevant enough also for the pupil. A boring teacher thus drives away his audience

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faster than an open drainage does the pedestrians! If I were not a poet, I wouldn't be anything else, said a poet once. That is how a true teacher also feels. He pours his entire being into his work. Therefore, lethargy, absence of curiosity, adamant mentality, intellectual constipation, and above all, an unwilling choice of teaching as one's *metier* (vocation) are a teacher's arch enemies to be grappled with resolutely in order to exterminate them.

4. Are the Teachers Available?

The UGC and the GRs lay it down that in addition to the teacher's daily workload of four lectures on an average, he should be available on the campus a little longer. Even if one may occasionally allow certain latitude in the enforcement of this code, the question one might raise is this : the teacher may be available on the campus but is he in his class? Long ago I once overheard an otherwise perfectly non-violent colleague of mine warning his handful honours class students that if they were sighted within a radius of four kilometres of the campus (thus entailing him to engage the class), he would simply gun them down! The episode not only adorns the point in question but also underlines its truth.

5. Are the Teachers Humane?

In his poem "The Best of School", D.H. Lawrence likens the relationship between the teacher and the taught to a vine that clings and cleaves a big tree for its own support and growth. Are the affectionate bonds between them snapping very fast today? The teacher's overbearing, authoritarian and even hostile attitude to the student easily vitiates and embitters interpersonal relations. Even a normal exchange/acknowledgement of greeting lubricates the cogs of affinity. Is absenteeism among students a docile substitute for violence in protest of such unresponsive teachers? Is it a negative choice of keeping oneself away from the hated scene that the college as a whole represents?

In these times of a growing feeling of alienation among the young, the humane factor cannot be stressed hyperbolically, as various studies consistently show that teachers' indifference and unwilling communicativeness with the students eventually spell out one of the main causes of student unrest.

One may further ask, is this indifference due to wrong priorities as well as a feeling of being irrelevant to an ineffectual in the system? One of Nissim Ezekiel's 'Very Indian Poems in Indian English' called "The Professor" seems to enumerate some of the wrong priorities in the following words :

By God's grace all my children
Are all settled in life.
One is Sales Manager,
One is Bank Manager,
Both have cars.
Others also doing well,
though not so well.
Every family must have
black sheep ....

Here economic achievement also is the parameter of success in life, a popularly accepted notion that smacks of the bazaar mentality. Indeed, there is absolutely nothing execrable on the part of teachers to fortify themselves in terms of economic stability; however it should not pejorate into Mammon worship.

6. Are 'Teaching Shops' Responsible?

Private coaching classes, which my revered professor once called 'Teaching Shops', have established a parallel system of education the same way as black money has established parallel economy in this country. And both are now so well entrenched that following Gresham's famous law, these teaching shops now substitute colleges, as 'guides' substitute texts. Both parents and students have generously patronised such an *a la carte* menu served by the teaching shops and bazaar notes (guides), though not entirely without justification.

Let us note a contrast here. The annual college tuition fee for a "six-or-seven-course meal" in Maharashtra is Rs. 410, whereas in a private teaching shop it is at least Rs. 1,000 for three to four courses which most parents pay promptly. Even so, the attendance in the "shop" is disciplined and docile unlike in the colleges. Does it endorse the philosophy of high cost for high quality? Does it also confirm the general experience that subsidised low pricing makes a commodity/a service lose its value and importance in the eyes of the consumer? In such a situation, what if the government closed down all the colleges or at least stopped all aid/subsidy and legitimatised tuition classes as result-oriented educational institutions affiliated to different universities? And then will all the lecturers, for all their learning, efficiency and sincerity, be absorbed in these institutions metamorphosing them overnight into magnets attracting house-full attendance, the same way a branded communal demagogue is purged overnight if he crosses floor to join a supposedly secular party?

7. What About Physical Factors?

How may colleges in our country have their own buildings and premises conducive to the serious activity of teaching and learning? Classes are held in the most unimaginable places, like godowns, dilapidated old havelis, bungalows, buildings used earlier as sanatoria or dispensaries, or situated amidst slums or alongside crowded main thoroughfares and even cattle slums and – ugh! – brothels! In such a situation one cannot even think of such infrastructural luxuries being available as drinking water, urinals, latrines, common rooms for teachers, a reasonably furnished chamber for the Principal and his administrative staff, a canteen, an auditorium, a playground, and so on. Add to this inaccessibility on account of unsatisfactory transportation. Such campuses obviously act as repellants for the dear human mosquitos called the students.

8. Is Unemployment Phobia a Deterrent?

In a country suffering from the damages inflicted by an explosion of the population bomb, mass unemployment has resulted in a mental state that may be described by devising the new term 'classtrophobia'! In the original disease (claustrophobia) the patient develops a morbid fear of being trapped in closed places. Is the classroom becoming such a place for the prematurely employed students whose absenteeism and unpunctuality seem to cause a growing threat to serious learning on the campus these days, as the choice for them between allegiance to the employer or to the teacher is only a matter of foregone conclusion? Was it not Lord Jesus who said, no man can serve two masters at a time?

9. Whither Hath Fled the Attendance Roll?

It is now an open secret that most colleges and universities have simply stopped bothering about a meticulous maintenance of the attendance roll in the class for a variety of reasons, some of which may even be valid. This has guaranteed total impunity to the student who is even otherwise a born *bindhast* in almost all matters concerning educational discipline and decency.

10. Where are the Rejects?

We live in the age of rat races in all walks of life. The level of securing merit in various examinations qualifying entrance to various professional courses has risen to such dizzy heights that even fifteen per cent merit above distinction (i.e. 70%) fails to secure a seat in one's cherished course. Consequently, the rejects become the angered, unwilling and frustrated registereds for unwanted, hated, useless courses. What motivation can they have for attending lectures/classes? They either choose to masticate pan masala or chewing gum that presumably inspires them to meditate over their future, or get lost into cigarette-smoke dreams, or the lucky and adventurous among them successfully angle for like-minded mates of the opposite sex and thus add a romantic touch to the otherwise repellant college campus!

11. Is there a Stray Variety Too?

Keats, in his famous "*Ode to Autumn*" describes a familiar sight in autumn rhetorically thus :

Who hath not seen thee oft amid they store?
Sometimes whoever seeks abroad may find
Thee sitting careless on a granary floor,
Thy hair soft-lifted by the winnowing wind;
Or on a half-reaped furrow sound asleep,
Drowsed with the fume of Poppies,...

My mind sags with a sense of guilt when I confess that Keats's lines above (and especially the last one, these days!) never fail to evoke the picture of college students of today in my mind. Think of the stray youth registering in a college because the dad has ample money and the young men have ample time, energy and desire to be conspicuously sighted on the college campus, speeding their expensive two/four wheelers. They never hear "time's winged chariot hurrying near" behind them; that is, getting (away) with a degree in a specified period of time is never their design. They would just like to be there, the same way as a court-bird simply longs to be in the court rooms!

12. And Those Simple-minded Romantics?

Over and above these categories, there still remains a microscopic minority to be reckoned with. For want of a better description I simply call them the Romantics. These are essentially the middle-class gentry, who cherish a guardedly romantic view of college education. They are innocuous and derive a mild joy of adventurism even when they only tread the campus, shun the library and exchange class notes (that is, coaching class notes) with the girls in their classes! They go lyrical even if a brisk hand-shake with a co-ed is managed! Cutting classes for them is a triumphant act.

13. The 'Last Year' Syndrome/The 'Haves' Want More

Of late one notices a strange canker called 'Last Year Syndrome' vitiating the atmosphere in educational institutions. This applies uniformly to all the terminal points such as 10 + 2 + 3. The symptoms are only a few but well-marked. Together they can be termed "hyperpeptia" which can mean gargantuan hunger : the more you feed the patient, the more he demands. Even if your institution has reasonable facilities to make the pupil's life comfortable, the hyperpeptics reading in the years will be restive and greedy for more or for different facilities which you cannot supply at a short notice. Thus, if you provide cool drinking water in a *matka*, they will demand a water-cooler; if you have two fans in the library, they will demand five; if you have badminton and table tennis facilities, they will stage *dharna* for cricket kit. They will be riotous, lyrical, touchy in their general conduct. And all this will go under the mantra, "This is our last year, Sir!" – As if that is the last year of their life itself. The only eventuality they will never demand is "more lectures". This syndrome is an important cause of absenteeism.

Well, I feel I have practically run through the causes of growing absenteeism among college goers. Now as for the 'cures', I suppose the questions I have raised above are of the rhetorical variety, that is, they imply the answers too! Remove the causes, and the cures are achieved.

The Central Government's policy perspectives under "*Challenge of Education*" says, "Teacher performance is the most crucial input in the field of education". It also states that the teachers' "Personal examples" matter greatly in the activity of education. The teacher is indeed the key-stone in the entire edifice of formal education. Hence I thought it appropriate to highlight the teacher in some detail in point Nos. 3, 4 and 5 above.

However, it is easy to speak about the teachers' commitment, qualifications and so on, simply because they are on the pay-roll. One who pays the piper calls the tune. But then shouldn't we think of the marginal facilities and comforts in their academic pursuits?

And aren't we to talk about commitment and decency on the part of the students as a more or less well-organised community? Granted that the curricula are irrelevant, the syllabi are unchallenging, the lectures are boring, the examinations are a hoax or a ritual, are we wrong in observing that forbearance, curiosity, tenacity, patience and sensible communicativeness are the qualities that go into the making of good students? Who will make the students realise this? Only the teachers? What about the leaders in various walks of our social life? And aren't the parents expected to inculcate a sense of responsibility in their wards?

– The issue is deeper than meets the eye.

Cicero, the Roman rhetorician, once said, "If you have a garden and a library, you have about everything". That, of course, refers to the requirements of a cultivated mind.

A college Principal of today is constrained to work on a much more mundane plane in order to forestall the insidious side-effects of absenteeism. Therefore, he keeps telling himself and convincing his Governing Council, "If you have a cafeteria, a cricket kit and a playfield on the campus, you have more than everything".

– That cheerily controls his BP!

Internationalisation of Education

(Contd. from page 4)

– *Goal Emphasis* :

Adaptation of knowledge over efforts towards creation of knowledge.

– *Contextial Responsibility* :

(i) Operative knowledge (applied knowledge) acclamatized and amplified in own culture.
(ii) Nature of institution to be built with self-reliant originality.
(iii) Curricular design is a composite effort both by the specialist as well as the generalist.

– *Management* :

Planning and development and operation of universities is today a new discipline or profession which cannot be left to novices and birds of passage.

– *International Cooperation* :

In an unequal world aim should be to restore the equality between the donor and the recipient.

While knowledge in the two forms mentioned before will flow internationally, building of an institution is specific to a time and place.

It is necessary to share experience and discover the basic elements, which inform the design of a variety of institutions.

Reflections from the Mirror

R.P. Rastogi*

It is somewhat refreshing to look back after having worked on both sides of the fence: as a student, a teacher, a head of a university department for a long time responsible for teaching as well as organization of teaching and ultimately as Vice-Chancellor with a bigger domain of responsibility, requiring much greater vision and idealism combined with professional motivation. Serious involvement in teaching simplified the departmental and university administration. My remarks and impressions in this essay might reflect my bias towards university teaching, but they are valid for all levels.

I feel happy working under constraints. It has to be understood that the teacher's response has to be ingenious under new situation, because nobody can prescribe thumb rules and no two situations can be exactly identical.

Development of Confidence

Apart from teaching the content of the syllabus, a teacher has to make extra efforts for generating confidence among students. The first principle is that one should never talk in terms of "you do not know", "You can never understand" etc. Rather the attitude should be "You have not understood; it does not matter; you can probably understand this way" or "wait, you will understand after sometime" and "you are capable of understanding".

The first strategy is probably based on the assumption that for fear of being exposed before his classmates, the student will make extra efforts to understand even well in advance. But this can demoralise and does demoralise the pupils. To my mind students do not have to be driven to the point of demoralisation. Instead a teacher has to treat his students with utmost sympathy. Even an unconscious attempt to denigrate can have undesirable consequences. To a very great extent, a student requires paternal affection from the teacher particularly on account of the fact that he misses it badly in the changing social set up.

Promotion of Positive Qualities

Nobody is perfect. However, everybody is creative in one sense or another. It is only a question of degree and the type of creativity. Somebody may be extraordinarily creative in one area like a very successful writer or a reputed painter. One would have gradations in quality out of a group of persons who have an artistic or literary taste. In the same way, we would have gradations in persons engaged in other type of creative activities.

Considering the group of persons engaged in scientific pursuits as an example, we may have persons who are good in design of experiments or experimental skills, or the treatment of data or playing with mathematical ideas or conceptualizing or abstract thinking. If all the qualities are there in an individual alone, he would be extraordinarily good. However, this is seldom so. Nevertheless, society needs all types of talented persons. The job of the teacher is to identify the desired qualities in a student, promote and nurse them, irrespective of the level he is teaching or irrespective of the subject he is teaching. This is all the more important for a society like ours which has to come out of a deep morass.

Missionary Spirit

I still feel that the sense of idealism and the missionary spirit which was displayed by teachers in the pre-independence period is even now needed for our country. The country has recognised the role of teachers in nation-building and has taken all possible steps to enhance the social and financial status of the teachers. Even after more than forty years of independence, hard work by the nation is still needed and will continue to be needed. A climate for the same has to be nursed and this job ought not to be left to politicians alone who are primarily interested in short-term gains, intrigues and self-interest.

The most glaring example is the politician's role in bringing down unabashedly the educational system in Bihar to the rock bottom. It has now infected the neighbouring States as well. Mobocracy and anarchy are considered to be synonymous with democracy and educational goals and priorities are completely ignored. Hence, the teacher should come forward to resist the temptation for short-term gains, fight the pressures and tendencies which tend to retard his zeal and thus ultimately save the country.

One of the teachers' main job is to inspire. In this context it has to be noted that example is far more effec-

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tive than precept since action speaks louder than words. The impression of the teacher and his statements are far deeper if his sincerity and character are far more transparent. The teacher is watched very minutely both in the classroom and outside. If he is found uselessly gossiping in the school, college or university, the students do not carry a good impression of him.

I remember in Lucknow University students used to minutely watch the movements of teachers in Hazratganj. Students do not have respect for a teacher who is involved in intrigues or cliques although they may not openly express it during their student career. But they do not hide their impression once they leave the portico of the university. On the other hand, a professor who is a scholar or who has given enough evidence of scholarship commands considerable respect and the pupils freely express their feelings (full-throated praise) during their student career and even after.

In this context, I recall a memorable incident which shows how eagerly students look to opportunities for getting inspiration. Once almost at the end of my tenure as Vice-Chancellor, I was addressing a large gathering of students. In general, there is a tendency to lose heart in the face of difficulties. While talking about this aspect, I quoted the following lines of a poet :

नाविक श्रम होगा व्यर्थ सभी यदि धारा ही अनुकूल न हो।

(O, Boatman! All the labour would be lost if the current is not favourable)
almost echoing the usual general sentiments. But then immediately I said that I would like it to be read as –

नाविक श्रम को कोई अर्थ नहीं, यदि धारा ही प्रतिकुल न हो

(O, Boatman! Labour and hard work have no meaning (relevance) if the current is not unfavourable).
Immediately there was wide applause from all corners of the house. The message received was that one should be happy in facing difficulties.

Students are not unhappy when they get something positive even after being rebuked or admonished. During my encounter with research students, many occasions would come which would make me angry when their response to academic issues was not upto the mark. I would never have any bias or prejudice against anyone. Once I asked one of my research scholars, "Mr. X, when I scold you, you must be very unhappy". The reply was instantaneous, "Sir, we welcome it because we know that after this we will get something good from you". I realized that it was my habit to sooth their feelings by giving proper advice or by suggesting some new prescription, new direction or new orientation.

Seriousness of the teacher is also easily gauged by the laboratory staff who also have tremendous respect for such teachers. One small instance at Gorakhpur University is quite revealing in this connection. Very often, the department would remain open upto 8 p.m. or even beyond for research purposes. Occasionally we would be having evening seminars. Group discussion meetings were the normal phenomena.

Shri Phulena, a laboratory bearer, was assigned the duty of closing the department when everyone had left. Once we were engrossed in a long discussion which went beyond 9 p.m. After the discussion when I was about to go home, I just remarked, "Phulena, you must be very unhappy and cursing us, because occasionally we go even upto 10 p.m.". His response was instantaneous and without any element of hypocrisy, "It looks very good and I feel happy when you people are involved in serious discussions". Precisely, the same feeling is shared by students when they watch a teacher seriously engaged in his work.

Teacher's Competence

The real bridge between the teacher and the taught is KNOWLEDGE (विद्या-संधि) as pointed out in Taittariya Upanishad. There is no better method of strengthening and sustaining this relationship than continuous transmission of knowledge. At the elementary level or secondary level, this may not be so evident but at the university level, a teacher can command respect only by continuous transmission.

In view of the fact that contours of knowledge are expanding fast and knowledge is undergoing constant reorganization and refinement, effective transmission requires constant enhancement of teacher's competence. Therefore, whether a university professor, head of a department or even Vice-Chancellor likes it or not, he has to find time to enhance his own competence, perception and vision. Awareness of knowledge is one thing; absorption of knowledge and its subsequent transfer is something different. Students have all respect for a teacher who engages himself in both types of activities.

Higher level interaction between the teacher and the taught should involve micro-level teaching which many a time enables them to peep into the dark frontiers of knowledge which excites curiosity. But for meaningful and successful interaction, we must not forget that

प्राचार्यस्य ज्ञान-भंडारंम् कदापि रिक्तम् न भवेत्

(The teacher's reservoir of knowledge should never be empty).

Apart from persistent improvement in teacher competence and teaching methods, the three simple prescriptions which go a long way in generating a clean atmosphere should be given considerable emphasis. These are: (i) Punctuality in holding classes; (ii) Fairness in admission; and (iii) Fairness and objectivity in examinations. Students have a good deal of respect for a teacher who displays these attributes even though he may not be an outstanding scholar, although an outstanding scholar, barring a few isolated cases, would necessarily have these attributes.

Punctuality has many advantages. It is in a sense, what I would call a "corridor lesson" or a part of "out of classroom training". If the teacher practices it, he automatically inspires the students to do things punctually and complete them on time. It automatically leads to the habit of time management. Unfortunately punctuality and time management have been the biggest casualty in the Indian system of academic administration.

Teacher's Vision

There are two other qualities in a teacher which are certainly desirable for a developing country. These relate to teacher competence beyond his proficiency in the subject i.e. capability to understand the implications of new ideas, new events and new changes quickly. Since the age of evolution of cultures, economy and technology in isolation is long over, a teacher in a developing society has to keep his eyes wide open in order to be more serviceable to the society.

As a consequence of this and also due to the fact that each society had its own route of independent development, the further course of development has to be on new lines and not on the beaten track followed by others. One has to benefit by the experience of other societies, may even borrow the ideas but these must stand the test of logical and unbiased analysis. A teacher has to provoke and promote this attitude by his own example.

Teaching Methods

I am one of those who would not advocate any one set of method or presentation of the subject. In fact, I had never proper notes of may lectures. The advantage was that the subject matter could be reshuffled over and over again along with modifications in emphasis and clarifications. What I wish to indicate is that teaching procedure should be flexible in order to give more room for original presentation and introduction of freshness in the subject. It is obvious that this would require much greater imagination and initiative.

Most Important Quality

A real teacher cannot and should not give up teaching. In fact, he cannot help teaching if he is really a teacher. And a teacher would easily find out whom to teach and what to teach. A real student would always be willing to learn and a real teacher would always be ready to lend his wisdom and knowledge. Hats off to a teacher who continues to be a student and teacher all along.

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Student Support Services in India

K.M. Pathusha*

Introduction

Distance education in India has a history of only three decades. It has been developed as an alternative system to the formal system, to offer courses in higher education, specifically at the tertiary level. The major consideration for starting distance education courses was that it was expected to be accessible to those who could not enter formal institutions and for those who got rejected by the system. The primary reason for launching the distance education courses was the ever increasing demand for higher education and to cater to the educational needs of all those who for one reason or the other could not enter the formal system. The late 60s and 70s saw an extensive expansion of distance education system. By 1989 in India the number of students studying through correspondence and open university system had risen to 0.4 million (*Menon, 1989*).

The distance education system is not only suitable but also relevant for India. The geographical vastness of the nation as well as its ever increasing population makes it impossible to provide institutions of higher learning in all places where there is a need and demand. Further the cost of higher education is so forbidding that it is beyond the reach of many a million aspiring students. A considerable number of students drop out at various levels starting from the primary to the tertiary level because of economic and social compulsions.

The popularity of the distance education courses and the rapid strides the distance education system has taken in such a short span of time in India exercise strenuous demand on the institutions. The success of the experiment largely depends on the availability of all kinds of infrastructure especially the student support system. The question before us is whether there are sufficient services for offering the courses effectively in the Indian context. This paper proposes to examine in a general way the support systems available in India in comparison with those found in other countries and offer suggestions for improving it.

Support Systems

One of the six characteristics of distance education delineated by Kegan is "the use of technical media, often print, to unite teacher and learner". A corollary of this description is that distance education must have the capacity to bridge the separation and to ensure two way communication (*Daniel, 1984*). The technical support through media is one aspect of the support system in distance education. Personal contact programmes, study centres, students assignments and resource centres will constitute the second category of the support system.

David Seligman explains the use of non-print materials in distance education. He lists the following as important media possibilities available :

Audio :
- Radio is the most widely used and has, in distance education terms, a venerable history.
- Audio cassettes have followed from radio and are now in common use.
- Audio vision, that is combining either of the two above with print, picture, objects etc. has been used to good effect.

Visual :
- Still pictures from whatever source, whether it be print, photography, slides or film strip.
- Television in which programmes are transmitted at given times.
- Video cassettes which carry the same audio-visual message of the TV programme, but have greater flexibility of use.
- Video discs which are even more flexible than video cassettes but are not yet readily as available.
- Film which is usually used institutionally or is transferred to video tape to be part of a television programme or video cassette.

Satellite and Cable :
- These are essentially distribution systems but can have implications for interactive elements.

Computers :
- Microcomputers which can be home based.
- Computer terminals which work to a distant mainframe.

Home Kits :
- These can cover the whole range from home laboratories down to small pieces or equipment often cheaply produced.

(*Seligman, 1984*)

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The choice of these media depends on educational intension, the best method of delivering that intension, the skill of the people and the technology available. In addition the costs of initiation, production, distribution, utilisation and maintenance are also to be taken into account.

In the short span of history of distance education, we find different countries preferring different media. For instance the radio has been in use for many years and as early as 1976, studies had been made on the effectiveness of the use of radio in Japan in correspondence courses. Thailand's Sukhothai Thammathirat Open University has been using Audio-Cassettes effectively for many years. New Zealand is another country which uses cassette tapes for its tutorial sessions. As far televised teaching Japan and Canada had been in the forefront. The satellite delivered TV was made accessible in Canada in 1980.

The use of the print material in distance education has a very long history. They are generally used as a core medium in all distant education systems, with electronic media serving as a supplementary system.

Experts in the field of distance education have recommended the use of mixed approach with printed materials as core medium (*Srisa-an, 1984*). As it has been pointed out, the choice of the medium, other than the printed material is to be decided on the comparative cost effectiveness. "The media costs drop sharply as the clientele rises. As a programme, once produced and viewed or heard by more people is more cost effective". (*Distance Education in Asia and Pacific - Vol.I*). As such the electronic media can be made more effective if the materials produced are placed within the reach of a larger clientele. It is true that a developing country may find the use of TV to be very expensive initially but in the long run it should prove cost effective.

Support Systems in India

The student support system for distance education in India has heavily relied upon print materials. Bakshish Singh writing in 1988 points out that only 6 institutes out of 30 arrange radio talks for their students and TV support is not available to all. However, some educational programmes are relayed from TV centres but these are not student based, they are of very general nature.

The personal contact programmes have been one of the backbones of the system but studies show that the personal contact programmes are not very popular and attendance is thin. The reasons are many. One of them is that attendance is not compulsory at these contact sessions. "Attending these programmes involves travel and maintenance expenditure and leave from the place of work, being away from place of work. Only students from well off families can afford it". (*Distance Education in Asia and Pacific - Vol.II 1982*).

The assignments and response sheets system are two other instruments for reaching the students. Again the response sheet-assignment system is not found to be very successful because submission of assignments and response sheets is not compulsory in many institutions. They are not evaluated and they do not generally contribute to the grades awarded to students. Further there are administrative problems especially the institutes with larger clientele in receiving, checking and evaluating the response sheets and guiding the students.

In this connection it is worth mentioning the experience of the Institute of Correspondence Courses and Continuing Education of Madurai Kamaraj University, Madurai, with the evaluations of response sheets of its candidates. The Institute used to insist on the periodical submission of response sheets on specific lessons of a course and experts evaluated them. The response sheets would be returned to the candidates with the comments and remarks of the experts. Marks obtained in assignments and periodical test form part of the internal assignment system for its B.Ed. and M.Ed. degree courses. Another pioneering attempt of the institute has been its radio broadcasts on wide range of topics in different subjects using novel techniques which are well received and purposefully utilised by the students.

As for the study centres, most of the institutes have located them in big cities and they mostly serve as information centres. However the attempts of the Indira Gandhi National Open University to develop a purposeful support system must be referred to here. Students support services constitute a major component of its organisational structure. With the help of this component, students are provided with facilities leading to varied instructional experiences. As on today 108 study centres have been established all over the country. The centres provided with audio-visual equipments get the students exposed to video and audio programmes. Further tutorial and counselling facilities are also made available. The most important development is its telecast launched in May 1991.

It is appropriate to analyse the reasons for the lack of growth in multi-media approach in India. The first constraint is lack of resources. The second is the non-availability of trained personnel for producing appropriate softwares as well as coursewares. The third reason is that there is hardly any attempt to train teachers in the use of electronic gadgets.

Improving the Support Service

The foremost consideration in improving the student support service in India is that there should be an integrated plan on an all India basis. All the distance education institutes have to pool the resources – manpower and financial. In this way duplication of production of materials can be avoided. The expertise of specialists in various fields is made common for the entire nation. In the case of the production of software materials, there can be planned and organised cooperation among the institutions engaged in distance education. The materials can be shared by institutions and thus the cost of production can be lowered considerably.

The radio broadcasts have to be strengthened as the radio is within the reach of the poorest Indian in the remotest corner. The personal contact programme enables the teacher and learner come face to face. It can be made effective only if the age-old method of delivering lectures at such programmes is given up. Instead it must be a proper interactive programme meant for advising, guiding and counselling the learners. Such programmes can be made more effective when the teacher employs various media.

The response sheet-assignment system must be organised in such a way that the students really benefit from it. This can be made by making it as the basis for counselling in the personal contact programmes.

Lastly study centres must be equipped with hardware and audio-visual cassettes in addition to the usual reference materials. A centrally organised media centre may produce modular packages with print and non-print materials for units that are not and cannot be delivered through print materials alone. They are meant for motivating the learner in self study by providing the necessary infrastructure. These centres must be easily accessible to the student of a particular area irrespective of the institutions to which he is attached. Periodical visits of resource persons in various fields to the centres will be ideal for the learners to have face to face interaction with them.

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Development of Computer Based Software for Testing Teaching Aptitude

D.R. Goel*
Renu Mishra*

Introduction

The word aptitude is derived from the word ''optos'' which means fitted for. Some people think of aptitudes as innate abilities. Aptitudes do indicate potentialities. But they are something more than this. They imply fitness and suitability, a readiness to acquire proficiency in a given field or job.

An aptitude is a combination of characteristics indicative of an individual's capacity to acquire (with training) some specific knowledge, skill or set of organised responses, such as ability to speak a language, to become a musician, to become a teacher, to do mechanical work.

Aptitude tests are the measures of aptitude. When we use tests as measures of aptitudes, we are concerned with how well test scores predict the examinee's future performance in some activity.

Teaching aptitude test is a test designed to discover what potentiality a given person has for learning teaching profession or acquiring some particular skills for teaching as vocation.

Teaching aptitude test includes traits like interest in people and events, love for reading, patience, originality, creative power, sympathy, imagination, good character, interest in co-curricular activities.

Teaching aptitude test can be used for selection of teacher trainees because one does succeed in the occupation which is adopted in the light of one's aptitude. Thus teacher trainees need to possess abilities and skills of teaching.

Teaching aptitude looks to the future and on the basis of activities and skills that an individual now has, predict what he, with training, may become and what success he may have in teaching or educational field.

Computers have provided man with the capability to handle many varied problems which are tedious and routine in nature. Today, there is hardly any field where computers are not used. For example, research organisations, business houses, industries, space technologists, communication departments, travel agencies, government departments and educational institutions use computers extensively to solve their problems.

One of the greatest problem of teacher training institutions is selection of suitable candidates for the teaching profession.

Efforts should be made to develop a feasible and functional model of selection to teacher education institutions, that can be easily done through computers.

A question bank should be developed on teaching aptitude so that, it can identify the talented and committed candidates, who will be suitable for the teaching profession and are likely to benefit by the teacher education programme.

In this paper an effort has been made to develop computer based question bank software on teaching aptitude, for selection into B.Ed. programmes.

Objectives

1. To develop computer based question bank software on teaching aptitude.
2. To compare the achievement of candidates on teaching aptitude test discipline-wise.
3. To compare the achievement of candidates on teaching aptitude test mediumwise.
4. To compare the achievement of candidates on teaching aptitude test with respect to habitats.
5. To compare the achievement of candidates on teaching aptitude test sexwise.
6. To find out the correlation of the VPP Mandal achievement score on teaching aptitude with computer based teaching aptitude test score.

Hypotheses

1. There will be no significant difference in the

**School of Education, Devi Ahilya Vishwavidyalaya, Indore*

achievement of non science and science candidates on teaching aptitude test.

2. There will be no significant difference in the achievement of rural and urban candidates on teaching aptitude test.

3. There will be no significant difference in the achievement of Hindi and English medium candidates on teaching aptitude test.

4. There will be no significant difference in the achievement of male and female candidates on teaching aptitude test.

5. There will be no significant difference in the VPP Mandal achievement score and computer based test score on teaching aptitude.

Sample

The study was conducted on 30 B.Ed. students of School of Education, Devi Ahilya Vishwavidyalaya (DAVV), Indore (1991).

Development of Software

A database Mint.dbf having the following structure was created.

MINT.DBF

Field	*Type*	*Width*	*Decimal*
QUE	N	3	00
STAT	C	254	00
AL1	C	150	00
AL2	C	150	00
AL3	C	150	00
AL4	C	150	00
RRESP	C	1	00
MOBT	N	1	00
TOTAL	N	3	00

It is evident from the above structure that there are 9 fields in the database. In this database each record records question number against the field QUE question statement the field STAT, the four alternatives against the fields AL1, AL2, AL3, AL4, respectively. Right response against the field RRESP, marks obtained against the field MOBT, whereas total score obtained is stored against the field TOTAL. A total of 199 questions on teaching aptitude developed by the investigator is appended in the database. So a question bank having 199 items has been created.

A source programme DG2.BAS was created through BASICA to generate random numbers. This programme was then compiled and linked using QUICKBASIC and finally the executable programme DG2.EXE was obtained to generate the random numbers. Then a database PP.DBF was created having the following structure.

PP.DBF

Field	*Type*	*Width*	*Decimal*
QUE	N	3	0

This database is used to store the Random Nos. generated through DG2.EXE.

Another database Name.dbf having the following structure was created to store the Roll No., Name and total score obtained by an individual on the teaching aptitude test.

NAME.DBF

Field	*Type*	*Width*	*Decimal*
RNO	N	5	00
NAME	C	20	00
TOTAL	N	3	00

Then a programme TEACH.PRG was developed. It was further compiled and linked through CLIPPER D-BASE. The listing of the programme is given under the name TEACH.PRG. The programme is described as follows :

1. First of all talk is set off.
2. Screen is cleared.
3. A public variable FRAM is declared. Then a value is assigned to the variable FRAM. After this, the frame was drawn @ 2,0,24,79.
4. In the body of the box instructions regarding the test to be taken are given.
5. DG2.EXE programme is run to generate random numbers, which are then appended in the data base PP.DBF.
6. Then the database MINT.dbf is used. It is indexed on Que.
7. Then the database Name is used and the Roll No. and Name of the students taking the test are stored in it interactively. After this the starting time is initialized to 00. The values of hours, minutes and seconds are computed.
8. SR is declared as a character type memory variable, whereas Q is declared as numeric type variable. Initially one space and zero are stored in SR and Q respectively.
9. The first question to be attempted by the candidate is picked up from indexed file PP.dbf.

10. The question number picked from the PP.dbf is then sought in MINT.dbf.
11. After it is sought question number and time are displayed. Then the procedure is set to **XYZ.** (XYZ.PRG listing is given under the name XYZ.PRG). It is a word wrap procedure which wraps the question statement and alternatives after the declared width.
12. Then the student response is obtained in memory variable SR. If SR is equal to the right response then MOBT, i.e. the marks obtained is replaced with 1 and total is updated by 1 in the form of the variable S. Then the total is replaced by S. Simultaneously the response is confirmed. If the student response is not equal to right response then MOBT is replaced with zero.
13. Then there is a check for the time elapsed. If the time elapsed is 30 minutes then a message is flagged that the time is over. Then the total time consumed in terms of hours, minutes and seconds is displayed.
14. After this the serial no. is updated by one and total time taken and score obtained are displayed.

Data Collection Procedure

All the 30 students took the test on the computers. Instructions were given to the candidates by the investigator on computer regarding how to take the test. An already loaded question bank software on teaching aptitude was run by the candidates. Each candidate entered Roll No. and Name. After a candidate completed the test his Roll No., Name, Total and Total time taken were stored in a sequential data file, automatically.

Data Analysis and Interpretation

The data were analysed using correlated "t" test. The results are given below.

Disciplinewise Comparison on Achievement in Teaching Aptitude Through Computer Based Evaluation Software

Mean achievement score of science students = 15.06667
Mean achievement score of arts students = 11.86667
Correlation between mean achievement score of science and arts students = 1.314814E-02
SE (Standard Error) of science students = .6863759
SE of arts students = .9849661
The value of correlated "t" test = 2.649203

Since the obtained t value (2.6492) is higher than the value (2.14) which is required to be significant at .05 level. So, the mean achievement score of science students is significantly higher than that of arts students on teaching aptitude test.

Thus the null hypothesis cannot be sustained. It may, therefore, be said that the science students are likely to achieve significantly higher than the arts students on teaching aptitude test.

Sexwise Comparison on Achievement in Teaching Aptitude Through Computer Based Evaluation Software

Mean achievement score of male students = 12.06667
Mean achievement score of female students = 15.06667
Correlation between achievement scores of male and female students = .14440513
SE of male students = 1.025701
SE of female students = .7068825
The value of correlated "t" test = 2.588847

Since the obtained t value (2.588) is higher than the value (2.14) which is required to be significant at .05 level. So the null hypothesis cannot be sustained.

It may, therefore, be said that females are having higher teaching aptitude than the males.

Mediumwise Comparison on Achievement in Teaching Aptitude Through Computer Based Evaluation Software

Mean achievement score of
English medium students = 15.55556
Mean achievement score of
Hindi medium students = 15.55556
Correlation between the achievement of
English and Hindi medium students = -.2140891
SE of English medium students = .728606
SE of Hindi medium students = .6034888
The value of correlated "t" test = 0

Since the obtained t value is 0, so the hypothesis that there will be no significant difference in achievement scores of English and Hindi medium students in teaching aptitude, cannot be rejected.

So on the basis of medium the students cannot be discriminated on teaching aptitude.

Comparison on Achievement in Teaching Aptitude Through Computer Based Evaluation Software With Respect to Habitat

Mean achievement score of rural students = 12.2
Mean achievement score of urban students = 14.5
Correlation between the achievement score of rural and

urban students = .108402
SE of rural students = 1.331666
SE of urban students = 1.23153
The value of correlated “t” test = 1.342657

Since the obtained t value (1.3426) is lower than the value (2.14) which is required to be significant at .05 level. So the hypothesis that there will be no significant difference in the mean achievement scores of rural and urban students in teaching aptitude, cannot be rejected.

It may be said that urban and rural students do not differ in teaching aptitude.

Correlation of VPP Mandal Achievement Score with Computer Based Test Score on Teaching Aptitude

Mean of VPP Mandal achievement score = 73.4
Mean of computer based test score = 72.5
Correlation between VPP Mandal and computer based test achievement scores = .6054801
SE of VPP Mandal test score = 1.752289
SE of computer based test score = 3.708099
The value of correlated “t” test = .300802

Since the obtained t value (.300802) is lower than the value (2.14) required to be significant at .05 level. So the null hypothesis cannot be rejected.

Obtained correlation value is .6054801, indicating that VPP Mandal test and computer based test on teaching aptitude is quite correlated.

Findings

Following are the findings of the study.

1. Science students scored significantly higher than the arts group on teaching aptitude test.
2. Females achieved significantly higher than the male students on teaching aptitude test.
3. English medium and Hindi medium students did not differ significantly on teaching aptitude.
4. Urban and Rural students scored equally on teaching aptitude. They also did not differ significantly on teaching aptitude.
5. Both the VPP Mandal test and computer based test on teaching aptitude are quite correlated.

Conclusion

Science students are having the higher teaching aptitude than arts students. Thus in teacher training institutions Science candidates should obtain due weightage.

It is evident through the study that females have scored higher than males on teaching aptitude. So, females could be allotted more seats in teacher training institutions. More and more importance and seats to be given to the females in teacher training programmes.

English and Hindi medium students scored equally on teaching aptitude test. So, English and Hindi medium students should be treated at par with respect to teaching aptitude.

No significant difference was observed in the performance of rural and urban students on teaching aptitude. Hence, on basis of habitat the students cannot be discriminated on teaching aptitude.

It was found that the VPP Mandal test and computer based test on teaching aptitude are quite correlated.

It is evident from the above result that the computer based test has its own credibility.

Appendix - I

TEACH.PRG

```
SET TALK OFF
CLEAR
PUBLIC FRAM
FRAM = CHR(201) + CHR(205) + CHR(187) + CHR(186)
+ CHR(188) + CHR(205) + CHR(200) + CHR(186)
@2,0,24,79 BOX FRAM
@5,10 SAY “TEACHING APTITUDE TEST”
@10,10 SAY “INSTRUCTIONS ARE TO BE FOL-
LOW”
@13,10 SAY “1. YOU HAVE TO ENTER ROLL NO
AND NAME”
@15,10 SAY “2. YOU HAVE TO ATTEMPT 20 QUES-
TIONS”
@17,10 SAY “3. QUESTIONS ARE TO BE AT-
TEMPTED WITHIN 30 MINUTES”
@19,10 SAY “4. YOU HAVE TO TYPE ONLY A OR B
OR C OR D”
@21,10 SAY “PRESS ANY KEY TO CONTINUE”
WAIT ” ”
CLEAR ALL
RUN DG2.EXE
SELE 1
USE PP && RANDO Q NO.
ZAP
CLEA
APPE FROM RAJ.INP SDF
INDE ON QUE TO PP
USE PP INDE PP
SELE 2
USE MINT
```

```
INDE ON QUE TO MINT
USE MINT INDEX MINT
STOR 0 TO Q && QUESTION NO.
SELE 3
USE NAME && HAVING RNO NAME SCOR
CLEAR
@ 1,0,24,79 BOX FRAM
S = 0 && SCORE
ROLL = 0
NM = SPACE(25) && NAME
@ 8,10 SAY “W E L C O M E”
@ 12,10 SAY “ ENTER YOUR ROLLNO” GET ROLL
PICT “99999”
@ 14,10 SAY “ ENTER YOUR NAME ” GET NM
READ
REPL RNO WITH ROLL
REPL NAME WITH NM
CLEA
SELE 1
GO TOP
STORE “00:00:00” TO A
STORE 0 TO H1,HH1,M1,MM1,S1,SS1,M
A = TIME ( )
H1 = SUBSTR(A,1,2)
HH1 = VAL(H1)
M1 = SUBSTR(A,4,2)
MM1 = VAL(M1)
S1 = SUBSTR(A,7,2)
SS1 = VAL(S1)
SNO = 1
DO WHILE .NOT. EOF( )
CLEA
STORE SPACE(1) TO SR
STOR QUE TO Q
SELE 2 && QUESTIONS
SEEK Q
IF FOUND( )
@2,1 SAY “Q”
@2,3 SAY SNO
@2,60 SAY A
SET PROCEDURE TO XYZ
TESTSTRING = STAT
RIGHT = 60
DO WRAP WITH TESTSTRING,RIGHT
CLOSE PROCEDURE
?
SET PROCEDURE TO XYZ
TESTSTRING = AL1
RIGHT = 60
DO WRAP WITH TESTSTRING,RIGHT
CLOSE PROCEDURE
?
SET PROCEDURE TO XYZ
TESTSTRING = AL2
RIGHT = 60
DO WRAP WITH TESTSTRING,RIGHT
CLOSE PROCEDURE
?
SET PROCEDURE TO XYZ
TESTSTRING = AL3
RIGHT = 60
DO WRAP WITH TESTSTRING,RIGHT
CLOSE PROCEDURE
?
SET PROCEDURE TO XYZ
TESTSTRING = AL4
RIGHT = 60
DO WRAP WITH TESTSTRING,RIGHT
CLOSE PROCEDURE
@ 22,50 SAY “WRITE YOUR ANS”
GET SR PICT “A”
@ 1,0,24,79 BOX FRAM
READ
IF SR=RRESP
REPLACE MOBT WITH 1
S = S + 1
REPLACE TOTAL WITH S
@ 22,25 SAY “your answer is correct”
ELSE
REPLACE MOBT WITH 0
@ 22,25 SAY “your answer is wrong”
ENDIF
@ 23,10 SAY “Press a key to continue”
WAIT “ “
ENDI
IF M = 30
CLEA
@ 10,10 SAY “TIME OVER”
EXIT
ENDIF
STORE 0 TO B,H2,HH2,M2,MM2,S2,SS2,H,M,SS3
B = TIME( )
H2 = SUBSTR(B,1,2)
HH2 = VAL(H2)
M2 = SUBSTR(B,4,2)
MM2 = VAL(M2)
S2 = SUBSTR(B,7,2)
SS2 = VAL(S2)
H = HH2-HH1
M = MM2-MM1
SS3 = SS2-SS1
SELE 1
SNO = SNO + 1
SKIP
STORE SPACE(1) TO SR
ENDDO
CLEAR
@ 1,0,24,79 BOX FRAM
@ 9,10 SAY “TIME TAKEN : “
@ 9,25 SAY H PICT “99”
@ 9,27 SAY “:”
@ 9,29 SAY M PICT “99”
@ 9,31 SAY “:”
@ 9,33 SAY SS3 PICT “99”
@ 11,10 SAY “ TOTAL :”
@ 11,19 SAY S PICT “999”
SELE 3
REPL TOTAL WITH S
QUIT
```

Appendix - II

XYZ.PRG
Programme to “Word Wrap” Long String With Ragged Right Margin

```
PROCEDURE WRAP
PARAMETERS STRING, MARGIN
SET TALK OFF
LENGTH = LEN(TRIM(STRING))
*
* SET UP LOOP THROUGH ENTIRE STRING
DO WHILE LEN(STRING)> MARGIN
        SPOT = MARGIN
* FIND BLANK NEAREST RIGHT MARGIN (SPOT)
        DO WHILE SUBSTR(STRING,SPOT,1) # “ “
                SPOT = SPOT - 1
ENDDO
* UNTIL BLANK SPACE IS FOUND
        ?”   “, SUBSTR(TRIM(STRING),1,SPOT-1)
        STRING = SUBSTR(STRING,SPOT+1,LENGTH-
SPOT)
          LENGTH = LEN(STRING)
*
ENDDO
                    * WHILE LENGTH > MARGIN
*
* PRINT REMINDER OF STRING
? “   “,TRIM(STRING)
RETU
```

Appendix-III

DG2.BAS

```
5 INPUT “TOTAL NO. OF ITEMS”; T
10 DIM A(T)
20 N% = T
30 RANDOMIZE TIMER
40 FOR X = 1 TO 20
50 A(X) = INT((RND*(N%-1)+1)+1)
60 FOR I = 1 TO X-1
70 IF A(X) = A(I) THEN 50 ELSE 80
80 NEXT I
90 NEXT X
100 OPEN “RAJ.INP” FOR OUTPUT AS #1
110 FOR X = 1 TO 20
120 WRITE #1,A(X)
130 NEXT X
135 CLOSE #1
140 SYSTEM
```

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Our Education Scenario

"Indeed the nation's search for self-reliant growth with professed egalitarian bias has given rise to a consensus on the objective of setting up a national, democratic, secular and scientific system of education for our country. Such a system of education was visualised as a significant element of the development matrix of our economy. Social scientists and planners emphasized the need to allocate a substantial part of the nation's budget on education which would help the formation of physical and human capital. Massive investment, in human capital was expected to accelerate economic growth of the country. The active participation of the state in extending the educational opportunities among the poorest of the poor would help to inculcate all sections of our people with spirit of democracy", said Prof. Satyasadhan Chakraborty, Minister-in-Charge, Department of Higher Education, Govt. of West Bengal, while delivering the Convocation Address at the 25th annual convocation of the University of North Bengal at Raja Rammohunpur. "However, this developmental role of education was soon lost sight of and education was considered a social welfare activity. Expenditure on education was delinked from the productive investment of the Government and education was not regarded as an integral part of our plan budget", he added. Excerpts

The academic environment of our country is, as it must be, conditioned by the economic forces and the changing pattern of our policy. The colonial system of our education was characterized by two predominant biases. On the one hand the educational system was to be subservient to the commercial interests of the rulers and on the other it would display an elitist character. Only students belonging to an affluent middle class could receive quality education in a few prestigious institutions and the underprivileged would be compelled to drop out of the system.

It was in the fitness of things that an independent India embracing a sovereign, democratic, secular and socialist society as a constitutional obligation should look upon education as a principal agency for social transformation. Indeed the nation's search for self-reliant growth with professed egalitarian bias has given rise to a consensus on the objectives of setting up a national, democratic, secular and scientific system of education for our country. Such a system of education was visualised as a significant element of the development matrix of our economy. Social scientists and planners emphasized the need to allocate a substantial part of the nation's budget on education which would help the formation of physical and human capital. Massive investment, in human capital was expected to accelerate economic growth of the country. The active participation of the state in extending the educational opportunities among the poorest of the poor would help to inculcate all sections of our people with the spirit of democracy. However, this developmental role of education was soon lost sight of and education was considered a social welfare activity. Expenditure on education was delinked from the productive investment of the Government and education was not regarded as an integral part of our plan budget.

The task faced by the Indian educational system in building the nation's economy and in promoting social justice and welfare was more challenging than that confronting the educational planners of the majority of the Third World countries. Ethnic, religious and cultural diversity is a part of Indian life. A balanced regional development that encourages the ethos of each of this bewildering variety of social groups is inextricably linked up with the progress of our educational system. An education system with room for all-round participation is a necessary precondition for universal political involvement essential for a democratic set up.

Unfortunately it is in these two areas, viz – vigorous state participation in the educational programme and a balanced regional development that shortfalls in the achievement of our educational system have been most glaring. In the First Five Year Plan the budgetary allocation of the Union Government to the field of education was 7.92 percent. In the Seventh Five Year Plan it has been reduced to a mere 3.25 percent – one of the lowest in the Third World. Instead of democratising our educational system our policy-makers have gone for an overcentralization of our educational set up. Education has been transferred from the State List to the Concurrent List and to strengthen the Centre's grip on the education system, a National Policy of Education has been formulated with a built in centralist bias. Two aspects of this policy militate against the democratic spirit in our constitution. First of all, the governance of educational institutions would leave little space for the participation of students, teachers and other sections of the community. Secondly, private management is sought to be encouraged which would loosen on us all the vices of an elitist, colonial education system – exclusion of weaker sections from quality education, commercialization of technical and professional education through capitation fees, winding up of courses for which the current market demand is not substantial.

Such marginalization and over-centralism have created a sense of alienation among a large number of people in different parts of our country. A curriculum designed for the students of Delhi cannot bring forth active participation of people in distant areas which is so essential in a pluralistic society. There has been a massive expansion of the educational opportunities of this country. But not only has it fallen short of the country's requirements but the inequality in the opportunities available has given rise to a sense of deprivation among the vast number of poorer people. It has taken us more than forty years just to make half of our population literate, not to speak of universal literacy which has been one of the primary goals of our educational system.

Just as centralism of our fiscal and political framework has bred a sense of injustice among our States, a centripetal education system has generated a sense of alienation among a large number of ethnic and religious groups. Social inequities have restricted educational opportunities for the backward classes, for the weaker sections and for the women. A number of Commissions and Committees have laid bare the weakness of our education system but their recommendations are yet to be acted upon. We have opted for a secular society in our constitution in deference to the glorious tradition of united struggle against the world's most powerful imperialist power. The reorganisation of states on a linguistic basis was aimed to fulfil the aspirations of people belonging to different cultures. The secular outlook has not been properly integrated with the content of our education and no attempt has been made to free the academic world of obscurantist ideas and superstitious beliefs. The language policy pursued by the Union Government has given rise to a feeling of disenchantment among the minority linguistic groups who have resented the element of coercion.

What was needed was an equal treatment of different Indian languages to redress the grievances of religious and linguistic minorities. A sense of alienation has led to movements threatening the very fabric of our country. As it always happens with any movement form, a section of the students has been closely involved in separatist and communal movements. Subsequently this lead has been used by many undesirable elements to work for the disintegration of our country.

In West Bengal sustained movements against the pitfalls of our education system have emboldened the State Government to experiment with an alternative system that ensures widest participation of all sections of people. The governing bodies of schools and colleges have been democratized making it possible for teachers, students, non-teaching employees and even common people to take an active interest in the educational institutions of their localities which must serve the interests of the society. Statutes of universities have been reframed to guarantee the broadest participation.

The language policy of the State has been aimed at creating a sense of belonging among the largest sections of our people. Emphasis on mother tongue even for attaining the highest degree is aimed at acquiring the basic knowledge of a subject which many find it difficult to master through an alien language. At the same time knowledge of English is sought to be strengthened through a more effective language teaching method which would help students to keep themselves abreast of current developments in their respective disciplines all over the world. Two major regional languages, Nepali and Santhali, have been encouraged to help large sections of the two communities to imbibe knowledge through their mother tongue. Nepali is being increasingly used as the language of official work in the Darjeeling Hills, and a collaboration among the State Government, the Hill Council and the North Bengal University can go a long way towards the development of the rich Nepali language.

Mention should be made of the remarkable success achieved by the State in spreading literacy for which the state has received appreciation from the UNESCO. One district has been declared to have attained hundred percent literacy and another seven districts are witnessing hectic programmes towards this goal.

This sort of experiment has produced encouraging results. With the participation of students and common people we have been able to root out the vices of mass copying, campus hooliganism, atrocities on women students. Examinations are being held more or less regularly and the spectre of unemployment has not deterred a majority of our students from taking their examinations with utmost seriousness. Students of West Bengal have done remarkably well in many all-India examinations. With proper motivation and training they are likely to do well also in other competitive examinations. Opening of training courses at the University level to equip our students for competitive examinations is being actively considered.

In spite of such achievements there are some gaps in our education system. In the first place, we have not been able to create enough avenues for vocational and technical education for which demand has been ever growing. Creation of more opportunities of professional and technical education after the Higher Secondary stage would only reduce the pressures on our conventional education but would also ensure the right kind of orientation needed for drawing the students to the field of liberal education. Although we are spending about 28 percent of our State budget on education, finance is proving to be the principal bottleneck in the way of bringing about the desired developments in our education system. We have to take a second look at the financing of our education system and to find out ways to make the richer section pay more for higher education.

One major lacuna in the Indian educational system is the lack of orientation towards manual work. Gandhiji warned us against this bias and Gurudev Tagore's experiments at Viswa Bharati were designed to remove this sort of angularity among our educated people. We have done precious little to overcome this attitude which has impaired our national consciousness. The National Social Service Scheme or such voluntary activities as anti-illiteracy drive can instil the right type of feeling into our students.

Coming to the field of university education I must say that the basic task of university teachers and students would be to dedicate themselves entirely to higher studies and research. This State has done a great job in extending educational opportunities and it is time to strive for further qualitative improvement. All the avenues need to be explored towards this end. It is necessary for the state to provide the minimal wherewithals to help them carry out this task. No scholar embraces an academic life with the expectation of leading a life of luxury. But an academic must be provided with the basic comforts so that he can pursue his studies without having to worry about the daily needs.

A campus throbbing with vigorous intellectual activity ultimately brings glory to the nation and the world at large. With a revolution of information system competition in the academic world has been evergrowing and new challenges are being encountered by our scholars. But we must not forget that one of the major goals of our society has been to achieve self-reliance in all fields of activity. Our academic research must conform to the needs of our society. We cannot rest on our past laurels and should make every effort to accelerate the development of our nation. If the academics of this university can fulfil this task, the future of this nation would remain safe in their hands.

The Resource Crunch & the Response

Extracts from Chancellor's Address

by

Prof. S. Nurul Hasan

Governor of West Bengal

Unfortunately, most of the Indian Universities are faced with serious financial difficulties and this is interfering with the discharge of their duties. The Association of Indian Universities has viewed with alarm the financial crisis which is being faced by the Universities. The budget of almost half the Universities are in serious deficit. Some Universities are unable to make regular payments to the teachers. Even more serious is the problem of the other necessary expenses which a University has to incur but due to inadequacy of funds it cannot do so. Books and journals, which are so essential for higher education, are becoming more and more expensive. Many Universities are finding it impossible to continue their subscription for journals or to buy the new books that are being published. Scientific equipment in many Universities has become old and out of date. It cannot be replaced by the new equipment and instruments that are being evolved day by day. Many of the valuable pieces of equipment are no longer in use because of disrepair. Lab-running expenses are being curtailed and this is adversely affecting experimental work. Funds are not being provided for other academic activities. Many departments are running short of specialist teachers and vacant posts cannot easily be filled. The building programme, especially of the newer Universities, is virtually at a standstill in many Universities. Students are not being provided the amenities so essential for corporate living and for their intellectual growth. I have every confidence that even with the constraint of financial resources the Hon'ble Minister will do his best to help out the Universities in the State.

What is however worrying me is the growing tendency, even among a section of intelligentsia, that too much is being spent on higher education and that this is at the cost of elementary education. The Government is being accused of creating a sectoral imbalance by emphasising higher education as against elementary education. A respected journal of our country remarked in its editorial that during the First Plan Period elementary education had been allocated Rs. 93 crores out of a total allocation for the educational sector of Rs. 169 crores. On the other hand, in the Seventh

Plan Period, the allocation for elementary education was Rs. 1,963 crores out of a total Rs. 5,733 crores. Thus, the percentage of allocation on elementary education came down from 55% to 34% and this was due to increase in the allocation for higher education. Another statement that has been made is that by spending more on higher education without charging more fees from students the education of the rich is being subsidised at the cost of the poor. A suggestion is continuously put forward that enrolment in higher education should be restricted, that fees should be raised, though it is also said that more scholarships should be introduced so that the deserving poor students may not be deprived of the benefits of higher education.

These ideas need careful examination. The first point I would like to make out is that the allocation for all sectors of education has been going down. It was around 10% of the total First Plan allocation, and it came down to 7% during the Third Plan Period. It has gone down to around 3% during the Fifth Plan Period. The Central Advisory Board of Education had recommended that a sum of Rs. 3,300 crores be allocated for the sectors of education and culture. Out of this, Rs. 1,850 crores be allocated for elementary education. When the Fifth Plan was finalised the total allocation for education came down to Rs. 1,850 crores. The Central Advisory Board of Education then proposed that out of this reduced amount Rs. 1200 crores be allocated for elementary education. But, because of the political changes, allocation for elementary education fell to under 700 crores whereas no substantial addition was made to the Plan outlay for higher education. The total expenditure on education as a percentage of Net Domestic Product in 1970-71 was 2.8%. Notwithstanding the enormous increase in the number of students this percentage in 1984-85 had risen only to 4.4%. However, the total expenditure of higher education as a percentage of Net Domestic Product remained stagnant as 0.5% from 1970-71 to 1984-85. In 1950-51, the total enrolment in higher education was 1,73,696. By 1988-89 this figure has risen to 39,47,922. Calculating on the basis of per capita expenditure on higher education it would appear that in terms of constant prices the per capita expenditure has been going down, even though the needs of modern higher education can only be met by raising substantially the allocation. An equally disturbing trend is that in 1960-61, 30% of the students enrolled in higher education were in the faculty of Science. In 1988-89 this had fallen to under 20%. The Education Commission, commonly known as Kothari Commission, had recommended that 40% of the students in higher education should, at the present stage of our development, be enrolled in the Science faculty. This short-fall in Science enrolment can cause serious obstacles in the path of development. The situation becomes more acute if you bear in mind that barely 3% of young people in the age group of 18-24 have the opportunity to enter the portals of a University or College. In developed countries, over 30% have access to higher education. The Kothari Commission made a very modest recommendation that 6% of young people in the relevant age group should have the access to higher education. Considering the constraint of resources it was felt that enrolment in colleges and universities should be restricted. The rate of expansion was brought down from 13% in 1969-70 to around 2.5% in 1977-78. To compensate for this restriction, the country went in for distance education. Not only has the Indira Gandhi National Open University been established, but many Universities in the country have introduced successfully correspondence courses. It is now possible to tell our people that you 'learn while you earn'. A deliberate decision has been taken to provide facilities for life-long education, which is so necessary in a progressive modern nation.

It is a matter of great satisfaction that access to higher education which had remained more or less confined to the upper and well-to-do classes at the time of Independence has now actually reached the vast majority of our population. It is because of this that the country can think of providing reservation in higher jobs to the backward classes of society. Today our graduates are running the largest welfare State in the world. Our engineers, doctors, lawyers, teachers, civil servants, industrialists and researchers have been able to shoulder the burden of social transformation. We are able to provide skilled and educated manpower not only to our own country but also to neighbouring developing countries. Even in the most developed country, namely, United States of America, Indian doctors, scientists, researchers and engineers have earned for themselves a place of honour and respect. Today we can boast of the third largest corpus of technical and scientific manpower in the world. If the country is to move forward and the bulk of our people to be rescued from the drudgery of hewers of wood and drawers of water and transformed into a skilled labour force comparable to the best in the world, if we have to solve the problems of technological growth so as to change the quality of life of our people, we can only ignore higher education at our own peril.

There cannot be a dichotomy between higher education and elementary education. One complements and supplements the other. If a holistic view of development is taken, education cannot be fragmented and false dichotomy created between elementary education and higher education.

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CAMPUS NEWS

South Asian Workshop on Street Children

The Tata Institute of Social Sciences, in collaboration with the International Association of Schools of Social Work, Vienna, organised the South Asian Workshop on Street Children in Bombay recently. The major thrust of the workshop was on understanding the situation of street children and analysing critically the policy and programmes for them in South Asian countries and finally evolving suitable training modules for functionaries working with street children at all levels.

Sponsored by UNICEF, the workshop was inaugurated by Mr. Vasant Saraf, Director-General of Police, Govt. of Maharashtra. It brought together 55 participants including social work educators, professional social workers, UNICEF and NGOs working with street children in India, Bangladesh, Nepal, Pakistan, Sri Lanka and Afghanistan.

The participating countries presented papers in plenary sessions highlighting the situation of street children, policy and programmes for their welfare and the role of the institutions of social work education to respond to the social reality of the growing urban phenomenon of street children. Other plenary sessions included the papers on the UNICEF programme approaches to respond to street children in India and presentation on NGO Forums on street children in major Indian cities of Bombay, Delhi, Calcutta, Madras and Hyderabad.

Through group discussions the participants evolved training modules at three levels – Social Workers at BSW level and Para-professional Workers, MSW and training of Government Officials (Police, Judiciary and Officials of Social Welfare/ Women and Child Welfare/Municipal Corporations).

The following recommendations were made after two days' detailed deliberations :

(1) Content of the curriculum should be on marginalised groups of children than on street children in isolation.

(2) The faculty members need to be involved in field practice by initiating demonstration projects in the area of street children.

(3) Institutions of social work must begin interaction with the NGOs working with street people and initiate a process of partnership with them and the curriculum should be developed together.

(4) A documentation cell is necessary to disseminate information on problems and programmes of street children.

(5) Inter-country collaboration on research and action should be encouraged. Schools of Social Work can act as pressure groups for policy decisions and hastening bureaucratic procedures.

Crystal Growth Centre Phase II

The Tamil Nadu Minister for Education, Mr. C. Aranganayagam, urged the Anna University to set-up a "Solar Energy Research Centre" and appealed to educationists and researchers to find out methods to make optimum use of solar power especially during the summer. He was speaking at a function organised to lay the foundation for the second phase of the Crystal Growth Centre (CGC) at the university. The Minister said that the State Government would render all assistance to this project since the time had come for the Government and research scholars to think of alternative sources of energy.

Mr. Aranganayagam said academicians and the teaching fraternity had a key role to play in the socio-economic development of society. The CGC had come a long way and Tamil Nadu was proud of having such a 24-hour research centre.

Prof. S.K. Khanna, Vice-Chairman, University Grants Commission (UGC), who unveiled a plaque to mark the occasion, said the UGC was happy that the Government continued to support the university in all its research and development activities.

Prof. M. Anandakrishnan, Vice-Chancellor, who presided, said that a few days ago, high quality emeralds were made at the CGC thus opening new vistas in the field of crystal sciences. Those NRIs who are trying to make investments in Tamil Nadu, would look not only for cheap electricity or water, but also for a good science, engineering or research infrastructure.

Hands-on Training to Engg. Students

Prof. N.V.C. Swamy, Director, IIT, Madras, stressed on the importance of engineering students being given hands-on training in industries as part of their course. He was presiding over the valedictory function of a month-long entrepreneurship development programme in "Energy-saving product technologies". Prof. Swamy said the IIT had recently invited industrialists to offer a planned set of courses as part of the curriculum.

Pointing out that in most western countries hands-on experience was a must for getting the engineering degree, he said the exact industrial situation should be made an integral part of the curriculum at least at the final year.

The programme was organised by the industrial and Technical Consultancy Organisation of Tamil Nadu (ITCOT) jointly with the IIT, with financial assistance from the USAID.

Dr. M. Anandakrishnan, Vice-Chancellor, Anna University, who delivered the valedictory address and distributed certificates to participants, underscored the importance of tapping non-conventional sources of energy and increasing the allocation for this sector. He highlighted the need to build energy efficiency consciousness among the people and evolving a proper system of energy efficiency rating.

Health & Hygiene for Mother & Child

A three-day functional workshop-cum-awareness camp on "Health and Hygiene for mother and child" was recently held at S.D. College, Muzaffarnagar. Sponsored by the UNICEF, Lucknow, the programme was jointly organised by NSS Girls Unit, Women's Studies and Development Cell and the Department of Home Science of the College. The purpose of the workshop was (i) to promote reproductive health; (ii) to promote physical and psychological development of children and adolescents; (iii) to promote knowledge about measures through which mortality could be reduced from acute diarrhoeal diseases as well as associated ill-effects particularly malnutrition in children; (iv) to prevent and control diarrhoeal diseases so that they are no longer a major public health problem; and (v) to improve the quality of information about the vaccination against various diseases at regular interval.

The workshop was inaugurated by Dr. Ajit Singh, Chief Medical Officer, District Muzaffarnagar. Initiating the discussions Dr. L.N. Mittal, Principal, S.D. College, emphasised the importance of good health and good nutrition for mother and child.

The topics covered were general diseases pertaining to women and children, vaccine preventable diseases, IDD, anemia, night blindness, awareness about sanitation and environment, diarrhoea management, importance of breast feeding, safe motherhood practices, importance of nutrition for girls during adolescence, Maternal and Child Health Programme (MCH), Universal Expanded Immunisation Programme (EIP), water borne diseases, health care in rural areas, protein calories malnutrition and U5MR etc. The college has adopted two villages, Naya Gaon, with the help of CASA, New Delhi, under Women's Studies and Development Cell and Sarvat under, NSS Girls Unit, the experiences of which were also related to the workshop. The pattern adopted was to have theoretical lectures followed by group discussion by participants.

Bhatkhande Memorial Lectures

The inaugural series of Pandit Vishnu Narayan Bhatkhande Memorial Lectures were recently delivered in Bombay by Dr. Premlata Sharma, former Prof. of Musicology at Banaras Hindu University and Vice-Chancellor, Indira Kala Sangeet Vishwavidyalaya, Khairagarh. The theme of the three lectures was Reconstructing the History of Indian Music in the Context of Indian perceptions of Time and Space.

Dr. Sharma, during the lectures spread over three sessions, spoke on "The idea of History, Indian and Western, its application to Music; Reconstruction of the History of Indian Music – main areas of enquiry; and the Problems of formulation, involving categorisation.

Dr. Sharma briefly reviewed the Western idea of history, beginning with the Greek view and referred to the name 'Original History' given by G.W.F. Hegal to the work of Herodotus and Thucydides, whose descriptions are, for the most part, limited to deeds, events and states of society. According to her the Greek view envisages a repetition of events in very minute detail, whereas the Indian view is concerned with a cycle of types or patterns and not with repetition of details. Prof. Sharma briefly referred to the views represented by rationalism, determinism, positivism, naturalism, theism (specifically Christian) etc. in the view of history as well as to the economic interpretation of civilisation.

Prof. Sharma made a plea for evolving an Indian framework for reconstructing the history of Indian music and suggested the scheme of *Purusarthas* as a plausible framework. This scheme is related to the theory of *Karma* which is not individualistic as the Westerner tends to see it, but is closely connected with the scheme of four *Rnas* or debts, viz. *rsi-rna*, *pitri-rna*, *deva-rna* and *bhuta-rna* which relate the individual to the past in the realm of knowledge and biological existence and to the principle of divinity and the physical world surrounding him. The individual is, thus, a unit inheriting the past and one who hands over responsibility to the future. She also referred to the Vedic concept of *rta* and *satya*, the order in the cosmos and the principle of sustenance or endurance, respectively.

She briefly reviewed the work initiated in the nineteenth century by S.M. Tagore and carried forward by V.N. Bhatkhande. Speaking on Reconstruction of the History of Indian Music and the Main Areas of Enquiry, Prof. Sharma made out a case for the eschewing of the existing model of periodisation, such as *Vedic*, *Epic*, *Natyasastra*, *Purana*, etc. for the simple reason that it represents a linear view of events, which is not valid in the Indian context, which is replete with overlappings, concurrences and co-existence of multiple layers of events.

She identified the source of history as textual, oral, archaeological, literary (in Sanskrit, Prakrita, Apabhramsa, regional languages), Persian annals, etc. and pleaded for an interdisciplinary approach, viewing music in its inter-relationship with all other arts, in any given point of time and space.

Deliberating on the Problems of Formulation, Dr. Sharma advocated that a holistic approach was always commendable adding that formulation does essentially involve categorisation or division. She proposed three broad divisions for the formulation of a history of Indian music:

(a) **Text**: Most of the work done hitherto pertains to this division, but the oral tradition or the unwritten written tradition has not yet been documented properly.

(b) **Context**: Ritual (Vedic, Agamic, Laukika), drama, social events, work situations, etc. as well as systems of patronisation, ethnicity, regional variations, etc. would be covered under context. The context has its own impact on form.

(c) **Form**: The organisation of text, melody and rhythm brings form into being; compositional and improvisational forms are inter-related. Instrumental accompaniment to vocal music, vocal and instrumental accompaniment to dance, vocal and instrumental ensembles, etc., *tala* and *chhandas*; interaction between vocal and instrumental music, functions of instruments, change in the status of instruments, etc. were mentioned as falling under the purview of form.

Smt. Krishna Khatua, President of the Indian Musicological Society, who presided, stressed the need for perceiving the Indian Music as an expression of characteristic Indian culture, in all its involvement in political, social and philosophical bearings, without isolating music and other arts and crafts. Lauding the pioneering work of Pandit Bhatkhande, in the realm of Musicology, she underlined the need for continued efforts to enrich the science of music and hoped that Bhatkhande Memorial Lectures, instituted by the Indian Musicological Society would break new grounds.

Village Development Programme

A two-day awareness generation programme on Rural Reconstruction and Village Development was organised by S.D. College, Muzaffarnagar at 'Naya Gaon' (Mansurpur) on 1st June and at Sarvat village on 2nd June 1992.

At Naya Gaon, Rural Development Awareness Camp, apart from evaluation of existing programmes run by the CASA and the college in the village, discussions centred on the strategies and policies for reduction of poverty, inequality and unemployment and growth with social justice. To sensitise village dwellers especially women, information inputs and programmes are being provided like immunisation, management of water borne diseases especially diarrhoea, nutrition, safe and clean drinking water, family welfare through planned parenthood and family spacing and reduction of infant mortality rate and still births. To improve the economic condition, income generation programmes like stitching clothes, ropes and baskets making, handicrafts etc., are being developed.

Naya Gaon has been adopted for the last two years jointly by Church's Auxiliary for Social Action (CASA), New Delhi and S.D. College, Muzaffarnagar, for complete rural transformation with emphasis on women and children. An Anganbari is being run here for 0-6 year children with midday meals along with a pre-primary school and a tailoring centre for girls.

At village Sarvat, NSS girls unit organised a health camp and awareness creation activities relating to empowerment of women and girls and village development as a whole. The village has been adopted by the deptt. of Home Science of the college and other units like NSS, Scouting and Women's Studies who are helping create a stage of rural transformation. Village Sarvat is just 3 kms off Muzaffarnagar and is predominantly a Muslim village with no impact of advances of science.

Through an unprecedented level of enthusiasm, social mobilization was used as a tool of social change. By providing components of advocacy, programme communication and intersectoral social alliances of different organisations, behavioural changes have been observed by community involvement and empowerment of individuals especially women for social action.

UP Plans Open Varsity

Uttar Pradesh will soon have an open university to cope with growing rush of students in the State. This was disclosed by the Minister for Higher Education, Dr. Narendra Kumar Singh Gaur in Lucknow recently. The Minister said that a high-power 15-member education advisory committee had recommended setting up an open university and modalities in this regard were being worked out. He further said that the need for setting up the open university had arisen in view of the committee's recommendation to limit the number of students in universities to facilitate a qualitative improvement in the standards of education.

Homoeo College Affiliated to DU

The Delhi Administration's Nehru Homoeopathic Medical College and Hospital has been affiliated to Delhi University to boost the overall development of this system of medicine in the country. According to the college principal, Professor Dr. V.K. Gupta, the affiliation of the college would raise the academic standard of the institute, which has played a "pivotal role" in popularising the homoeopathic system of medicine.

The affiliation would open avenues for postgraduate courses in homoeopathy and would lead to further advancement of the medical system in the country, Dr. Gupta said.

Birla Award for Asis Datta

Professor Asis Datta, a senior molecular biologist at the School of Life Sciences, Jawaharlal Nehru University, has bagged the first G.D. Birla Award for scientific research for 1990-91. The award is in recognition of his research in the field of molecular biology and biotechnology relevant to human health.

His recent work on the cloning and characterisation of two novel genes, that will yield benefits in diagnosis and nutrition has attracted international acclaim.

News from Agricultural Universities

Scientific Workers Meet

Delivering the valedictory address at the two-day State Level Scientific Workers Conference held at Tamil Nadu Agricultural University, Shri G. Ranga Rao, Agriculture Production Commissioner, Government of Tamil Nadu, suggested that the field experiences gained in extension work may be tailored as research programmes which could be undertaken by the farm scientists to effectively meet the challenges ahead. He also added that the varietal parameters, in addition to higher yield, should be pest and disease resistance, drought tolerence, non-lodging etc. He greatly appreciated the joint venture of the University and State Department of Agriculture for the successful deliberations of the Scientific Workers conference.

Shri R.C. Panda, Special Secretary, Agricultural Department, underlined the importance of taking up problem specific and area specific research programmes. Dr. S. Jayaraj, Vice-Chancellor, Tamil Nadu Agricultural University quoting the saying "Timeliness is Godliness in Agriculture", called upon the participants to the conference to strengthen the Farm Advisory Service (FAS) throughout the State. He suggested that effective skill oriented training programmes may be organised for field level functionaries. He also underlined the importance of preparing village fertility maps (VFMs).

Mr. P. Kolappan, Director of Agriculture, in his address lauded the concerted efforts of Farm Scientists and Extension Officers for the progress made in food front. Prof. K.R. Swaminathan, Dean, College of Agricultural Engineering, highlighted five successful innovations in bioengineering potentials in agricultural engineering and outlined their applicability in the present day scenario of agriculture in India. Dr. A. Narayanan, Director, School of Genetics, referred to the prospects and potentialities of cotton crop in Tamil Nadu.

Dr. S.P. Palaniappan, Director, Soil and Crop Management Studies, TNAU, spoke on coastal development. Referring to the deliberations made at the conference, he said that the research on green manure had to be revived so as to enhance organic farming.

Dr. G. Oblisamy, Professor and Head, Department of Environmental Sciences, highlighted the TNAU's research findings on Impact of Waste Water recycling on crops and soil, and the new research projects sanctioned in this area. Dr. N. Gopalaswamy, Professor of Agronomy, highlighted the recent advances in Agrometeriology for better crop production. Dr. P.C. Sundarababu, Professor and Head, Department of Agricultural Entomology spoke on Technology Development in the production and utilisation of Biocontrol agents.

Dr. S. Chelliah, Director of Research, in his concluding remarks, referred to the unique nature of this scientific workers' conference. He also outlined the national and international linkages of TNAU on research front.

The Conference also deliberated on the thrust areas of research and development in Crop Improvement, Crop Management, Crop Protection, Water Technology, Agricultural Engineering, Agriculture and Rural Development, Agro-forestry, Horticulture. The future research needs for specific agro-climatic regions were discussed and the future research strategies formulated for implementation.

News from UGC

Countrywide Classroom Programme

Between 25th June to 30th June 1992 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 1.00 p.m. to 2.00 p.m. and 4.00 p.m. to 5.00 p.m. The programme is available on the TV Network throughout the country.

1st Transmission

1.00 p.m. to 2.00 p.m.

25.6.92

"Communicating Communication - V: Communication as a Process"

"Of the Students, By the Students, For the Students"

"Commonwealth Literature"

26.6.92

"We, The People - VIII"
"Wells"

27.6.92

"Arts Acre: Vision of a Creative Community-I"

"Study of Indian Art History"

"The Week Ahead"

28.6.92

No Telecast

29.6.92

"A Quantum Leap Forwards"

"The Business File : Managing Financial Resources - Long Term Funds"

"Small Wonders"

30.6.92

"Laser Therapeutic Protection"
"The Pursuit"
"Yours Sincerely"

IInd Transmission

4.00 p.m. to 5.00 p.m.

25.6.92

"Computer Network-I: An Introduction"
"No Kidding"
"Bharthrihari: Ancient Indian Grammarian"

26.6.92

"We, The People - III: The Constitution and Social Equality"
"Human Equilibrium"
"Waste Management"

27.6.92

"The Potato Eaters-II"
"Colour of the Costumes"
"The Week Ahead"

28.6.92

No Telecast

29.6.92

"Ion Beams, Nuclear Collisions and Nucleus Macrophysics"
"Indian Ethos in Management-I"
"Oil Seeds - I"

30.6.92

"Laser Therapeutic Protection"

"The Pursuit"

"Yours Sincerely"

Nominations for US Fellowships

The University Grants Commission (UGC) has asked the universities to nominate senior teachers in universities and their affiliated colleges for fellowships and visitorships (1993-94) for post-doctoral research work at the universities and other institutions in the United States by July 30, 1992. However, the teachers who have already visited abroad with UGC/university assistance during last three years will not be again nominated.

Teachers with a minimum of 10 years' teaching experience and published research work are eligible for these fellowships and visitorships. The fellowship will be for a period of one academic year (6-10 months), while the visitorship will be for a short period (2-3 months). The UGC will provide international air-fare from India to U.S.A. and back. In addition, the U.S. authorities will provide allowance for maintenance, books and study-related travel in the host country.

The fellowships/visitorships are for fundamental studies in frontier areas in Physics, Chemistry, Mathematics, Life Sciences, Earth Sciences and Bio-Technology, Laser Technology, Marine Resources Development, Computer Science and Technology, Semi-Conductor Technology, Micro-Processors applications and Micro-Electronics, Communication Technology, Educational Technology and Mass Media, Renewable Energy Studies, Environmental Sciences and Technology, Urban Development and Planning, Transport Studies and Social and Economic History (including Histrigraphy), Science Technology and Society, Comparative Literature, Literature and Society, Performing Arts, International Economic Co-operation, Money and Finance, Economics of Energy, Policy Sciences and Comparative Ethnography, Education, Planning and Management, Philosophy of Sciences, Social and Political Philosophy, Physical Education and Sports.

News from Abroad

The Norbert Gerbier Mumm Prize 1993

The Norbert Gerbier - Mumm Prize for 1992 has been awarded to Messers Heikinheima, Thurtell and Kidd for their study on "An open path, fast response IR spectrometer for simultaneous detection of CO_2 and water vapour fluctuations.

An international meteorological research prize awarded anually by the World Meteorological Organisation (WMO) in recognition of an original scientific study on the relationship between Meteorology and Man, Nature and the Universe, consists of (i) a diploma awarded by the World Meteorological Organisation; (ii) a cheque of FF 50,000 (roughly Rs. 2.5 lakhs) offered by the Mumm Foundation; and (iii) a medal carrying the effigy of Norbert Gerbier presented by Mrs. Guiard-Gerbier.

For further details interested persons may write to : Monsieur le Representant, Permanent de la France aupres de l'Organisation Meteorologique Mondiale (OMM), Meteo France, 77, rue de Sevres, 92102 Boulogne, France.

Indira Gandhi National Open University

Schedule of Telecast for the period 1 July to 31 July 1992
6.30 a.m. to 7.00 a.m.

Date/Day	Academic Programme	Title of the Course
1.7.92 Wednesday	Distance Education	Shaping Up
3.7.92 Friday	Management	Accounting in Decision Making
6.7.92 Monday	Bachelor's Degree Programme	Measurement of Damages
8.7.92 Wednesday	Certificate in Food and Nutrition	Sukhi Jeevan ka Adhar – Ma aur Bachha – Santulit Ahar
10.7.92 Friday	Management	Management of Technology – Problems & Perspectives
13.7.92 Monday	Bachelor's Degree Programme	Harjane ka Nirdharan
15.7.92 Wednesday	Creative Writing in English	1. Travel Writing 2. Open Channel
17.7.92 Friday	Management	Management of Technology – Planning & Policy
20.7.92 Monday	Bachelor's Degree Programme	Double Integration
22.7.92 Wednesday	Educational Studies	Conducting Interaction Sessions
24.7.92 Friday	Management	Management of Technology – Implementation
27.7.92 Monday	Bachelor's Degree Programme	Dwishah Samakalan
29.7.92 Wednesday	Creative Writing in English Bachelor of Library & Info. Sc.	1. Writing for Children 2. Birth of Public Libraries
31.7.92 Friday	Management	Philip Kotler's Views on Marketing

BOOK REVIEW

The Problems of University Finances

A Study of Osmania University

J.L. Azad*

M. Sulochana. Financial Management of Higher Education in India. Allahabad, Chugh Publications, 1991. Pp. 371. Rs. 400/-.

The system of higher education has been characterised by heterogeneity in its size, quality and complexion. This heterogeneity has been accentuated by the wide disparities in resource allocations to the various constituents of this important sector of education. On the one end of the scale are the specialised institutions like Indian Institutes of Technology, Management and central universities etc. On the other end of the scale are the affiliated colleges, which are perennially afflicted by the paucity of resources. In between these two extremes are the state universities, which are funded by the state governments and the University Grants Commission. Quite a few of these universities are also subject to prolonged bouts of inadequacy of resources. Since the state universities along with their constituent and affiliated colleges cater to the vast bulk of university students, the provision of adequate financial inputs becomes an imperative need for their survival.

It is in this context that there is need for subjecting the finances of state universities to a critical review so that ways and means could be found to augment the resources of the universities and to ensure that the available resources are optimally utilised. Sulochana's attempt at studying the finances of Osmania University in the context of the overall financing of higher education in Andhra Pradesh is a significant step in that direction.

The main objectives of the study are to 'diagnose the genesis of shortage of funds and to suggest ways of wriggling out of the constraining restraints on sources and availability of funds and to conclude among the alternative solutions'. A laudable objective! It would, however, have been better if the 'resource crunch' in the university under investigation should not have been assumed as a preconceived fact, but as a hypothesis to be tested.

The report of the study has been divided into 11 chapters with 22 annexures, some graphs and a comprehensive bibliography. While the bulk of the study has been devoted to the problems of university finances, one chapter each has been devoted to budgeting and audit control in the universities. Thus the study gives a comprehensive review of the university finances in Andhra Pradesh with particular reference to Osmania University.

Chapter two mainly describes the official hierarchy of the university, the powers and duties of the different authorities of the university, etc. It is mainly a descriptive analysis of the administrative and academic bodies that control the university affairs.

Chapter three has been devoted to problems of university finances. The author has come to the conclusion that on an aggregative basis, finances for education as well as higher education have shown a declining trend. Andhra Pradesh has given higher priority to higher education although Osmania University has not been given its due share of financial subsistence. The author has underlined the necessity of accelerating the pace of investment in higher education and charging cost-based fees with ample provision for scholarships to the needy students.

The author has made a comprehensive analysis of the internal and external sources for higher education in four chapters. The main findings of the study are:

a) Fee contribution to the total resources of the Osmania University declined substantially over the period under review.

b) There are delays in the availability of financial assistance from the state government forcing the university to borrow from the banks at a high rate of interest.

c) The UGC has been more liberal in providing financial assistance to central universities rather than the state universities. Problems also arise when the state government fails to provide matching share to enable the university to lift the UGC assistance.

The author has discussed the budgeting and auditing procedures in two chapters (VIII and X). It has been found that the system of per-

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formance budgeting sought to be introduced by the Osmania University has not been successful due to certain administrative difficulties. The author has recommended the introduction of zero-based budgeting in the university.

About auditing, it was found that the university was reluctant to take action on the various points raised in the audit report, thus making the exercise somewhat futile. It is amazing that there were as many as 7347 items of money value amounting to Rs. 16.49 crores pending settlement relating to the period 1959-60 to 1982-83 in Osmania University. The position of Andhra University was equally bad.

The analysis of the university expenditure makes an interesting reading. It is disheartening to note that over the years, the share of expenditure on academic activities including salaries of academic staff was reduced from 48 percent in 1972-73 to 41 percent in 1985-86. Another fact highlighted by the study is the underutilisation of the built-in area of the university. It has also been revealed that there is huge subsidisation of higher education. In the case of Engineering and Technology courses, the extent of subsidisation was 97 and 99 percent respectively. The researcher has rightly suggested the upward revision of tuition fees to reduce the element of subsidy which is given indiscriminately to all students irrespective of their capacity to pay or capability to profit by higher education.

It is difficult to give even a bird's eye view of some of the significant findings of the study in a brief review of this kind. The author has done a commendable job in sifting, analysing and interpreting the huge statistical data that she was able to collect. Although she has concentrated her attention mainly on the Osmania University, the findings are relevant to most of the universities in India and from this point of view, the study is a valuable addition to the available literature on the subject. One can only hope that the study would arouse deeper thinking among the authorities that control universities in Andhra Pradesh and would lead to some action on the various recommendations and suggestions, which have been made in the study. The book would certainly be useful to the academic community – the teachers, students and educational administrators as also those concerned with the planning and administration of higher education in the country. It will also provide sufficient food for thought as well as reference material to the future researchers and scholars to delve deeper into the variegated problems of higher education finance – an area which has so far remained comparatively untraversed.

BOOKS RECEIVED

1. *ADVANCED TRAINING in the EEC: A guide to selected opportunities. Ed 1992-93.* Brussels: Commission of the European Communities, 1991. xix, 723p. Price not stated.
2. Aswathappa, K. *Legal environment of business.* Bombay: Himalaya Pub House, 1992. 380p. Rs. 190.00 (HB).
3. Bray, Mark. *Are small schools the answer?: Cost-effective strategies for rural school provision.* London: Commonwealth Secretariat, 1987. 87p. £ 4.00 (PB).
4. ______. *Multiple-shift schooling: Design and operation for cost-effectiveness.* London: Commonwealth Secretariat, 1989. 105p. £ 4.00 (PB).
5. ______. *New resources for education: Community management and financing of schools in less developed countries.* London: Commonwealth Secretariat, 1987. 88p. £ 4.00 (PB).
6. *BRITISH UNIVERSITIES: Guide to graduate study 1992-93. Ed. 8.* London: Association of Commonwealth Universities, 1992. xi, 386p. £ 24.95 (PB).
7. Chisman, Dennis. *Practical-secondary education: Planning for cost-effectiveness in less developed countries.* London: Commonwealth Secretariat, 1987. 72p. £ 4.00 (PB).
8. Michael, V.P. *Communication and research for management.* Bombay: Himalaya Pub House, 1992. 370p. Rs. 175.00 (HB).
9. Varma, Adarsh Kumar, Ed. *Communication 2000 A D: Silver jubilee commemorative volume.* New Delhi: Indian Institute of Mass Communication, 1991. vii, 210p. Rs. 125.00 (PB).
10. Woodhall, Maureen. *Lending for learning: Designing a student loan programme for developing countries.* London: Commonwealth Secretariat, 1987. 111p. £ 4.00 (PB).

INDIAN COUNCIL OF MEDICAL RESEARCH
ANSARI NAGAR, NEW DELHI-110029.

I.C.M.R. AWARDS - 1992

Indian Council of Medical Research invites nominations/applications from Indian Scientists for its various prizes and awards in the field of Bio-medical sciences. Application forms and other relevant information about the prizes can be obtained from the **Director-General, Indian Council of Medical Research, Ansari Nagar, New Delhi-110029. (Division of BMS).** Nominations and completed applications should reach this office on or before **15th September, 1992.**

COMMUNICATION

Professor Dandekar's Prescriptions – A Plea

With reference to the thought-provoking paper on 'Reforms in Higher Education' by Prof. Dandekar (*University News*, Nov. 25, 1991, p.1-11) and the comments on it from Sri M.C. Arunan of Bombay (*University News*, May 4, 1992, p.25), the prescriptions suggested by Prof. Dandekar to set right the ailing system of Higher Education in India amply reflect his talents as an economist but as he himself doubts 'a change from the one to the other is well nigh impossible.' This is of course true. So radical a reform cannot be done in one sweep, it will have to be brought about gradually. Under the existing scenario, higher education has lost relevance in India and no one who matters – be it a policy-maker or a politician – ever thinks of reforming the structure. From the days of Kothari Commission to the recent Janardhana Reddy Commission on education nothing radical has been suggested to rid the education system – primary, secondary and higher education – of the serious deficiencies with which it has been suffering from. The successive Governments (both at the Centre and the States) have been tinkering with education and deriving pseudo satisfaction that they have done their job. But a sincere and discerning critic of education in general and higher education in particular is bound to say that the policy makers are not interested in curing the disease as much as they are anxious to prescribe the diagnosis.

It is a matter of common observation that the examination system at all levels has lost its relevance. Even to conduct VII class common examination in some States the Headmasters have been excessively depending on the police force for security and maintenance of law and order. Virtually no examination is conducted in educational institutions without any fear of malpractices indulged in by the students. The authorities conducting the examinations – be it the Board of Secondary Education, Board of Intermediate Education or the universities – more often send 'flying squads' or 'observers' to check malpractices at the examination centres. The authorities appear to enforce discipline in the proper conduct of the examinations, but in practice they succumb to political pressures or other extraneous influences and hence do not effect the follow-up action. What purpose these examinations will serve if they are not conducted effectively and the hardworking and sincere students are not rewarded suitably? The mediocre talent that comes to the surface through malpractices, manipulations and manoeuvers has been cornering the benefits in the society. No less a person than the Chairman of the UGC has recently gone on record (''*The Hindu*'', Madras Edn., dt: 21.4.1992) saying the ''most of the theses submitted for Ph.D. are either repetitions or in some cases copies (imitations) of topics which are in no way relevant to the contemporary problems''.

With regard to higher education, it should be noted that every year many colleges are established (both under the Government and the private sector) mostly for political reasons and these colleges can hardly provide the infrastructure and other facilities for effective imparting of knowledge. In some cases, the private colleges are established in indecent haste – particularly as a consequence of poll-eve promises by the politicians – that except for a name plate of the college, hardly anything that can be called a part of education can be seen in the near vicinity! To cap it all, these private colleges get eligibility for 100% grant-in-aid by the State Governments after five years automatically though they hardly follow rules and regulations either in the admission of students or in the recruitment of teachers. As a consequence, the State Governments are compelled to allocate more resources for higher education.

Since the higher education in India is highly subsidised and since the powers that matter are not able to control the mushroom growth of colleges in the private sector, the investment in higher education has been increasing rapidly at the cost of the non-beneficiaries (according to Prof. Dandekar). Though one cannot strictly apply the rules of market mechanism to social activities such as education and community health, the resultant inequalities due to skewed distribution of opportunities in higher education will have long term impact on the society as a whole. In short, these inequalities are perpetrated on the society with due consent and abetment by the Governments. A possible solution would be to severely restrict the admission of students into colleges/universities for formal education proportionate to the availability of facilities and encourage the non-formal institutions such as Institutes of Correspondence Courses/Distance Education Centres so that the load on the colleges/universities can be considerably reduced. The powers that matter should stop forthwith all the sops such as scholarships/pocket allowances/ reimbursement of boarding charges and the like that are presently offered so munificiently to almost all the students pursuing higher education irrespective of their social and economic status. Only the meritorious and the economically poor and deserving students shall be given financial assistance to pursue higher education. In other words formal higher education should be restricted only to limited and deserving young men and women.

It should be noted that the universities are under political pressure to indiscreetly exploit the concept of autonomy only in matters of recruitment of teachers and administrative staff while in other areas of academic administration, the autonomy is hardly remembered. It is easier for a person to join a university as a lecturer than getting recruited as a junior lecturer in a Government college. The universities have been sore with the idea of recruitment of teachers on an all-India basis by the UGC. In fact the proposed UGC Amendment Bill is not allowed to see the light of the day as many universities (barring the Central Universities) apprehend that the Bill, if passed by the Parliament, will cut at the very roots of university autonomy. The conventional universities which are almost under the control of the State Governments (as they heavily depend on them for financial support and hence susceptible to political influences) refuse to be guided by any rule or amendment suggested by the UGC for recruitment of teachers. The UGC-sponsored JRF/Lecturership tests have not found much support from the universities as reflected by the results of these tests. When the universities recruit persons for teaching posts mostly on criteria other than merit, it is needless to say that the concept of accountability of teachers will be irrelevant.

Prof. Dandekar's suggestions and prescriptions should be given a serious thought by all concerned, including the UGC, NIEPA and NCERT so that we may not lose further time in bringing about much needed radical reforms in higher education.

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Varsity Autonomy – A Point of View

Please refer to the article "Universities and Their Autonomy in the Indian Context" by R.N. Chaturvedi published in your esteemed journal *University News* dated 18th May 1992. As far as the autonomy of the universities is concerned, nowadays the Central or the State Governments are being run by the democratically elected representatives of the people and no longer by any kings, queens, rajas or maharajas. The university autonomy was necessary only under the imperial rule so that emperors or kings should not prescribe as syllabus, for example, the history of their own dynasties and should not dictate that Ph.Ds should be awarded to their cooks in culinary arts! Such situation no longer prevails. Since our Government is democratically elected by the people, it can as well decide how best to spend public money and since it is entirely financing the universities and appointing its own nominees as Vice-Chancellors with full powers, the university autonomy is now totally redundant. The universities with the full autonomy have not shown better efficiency in their performance than even such humble and mundane Government organisations as Post Offices and Railways with no autonomy! I understand that the Government in the UK has already rid the universities there of this useless illusion of autonomy and the sooner we do the same here the better it would be for our universities since education is too serious a business to be left to the teachers alone. Obviously, one who pays the piper does and should call the tune and the teachers should not seek authority without commensurate responsibility.

During my teaching career spanning over a period of about thirty years, I have not yet come across any politicians or bureaucrats who have interfered with my teaching work or prevented me from teaching well in the class whereas many teachers have. The excuse of the so-called lack of autonomy is an old and a lame one for our lack of even reasonable performance as teachers and this crutch will not carry us far much longer.

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Philosophy

1. Bhattacharyya, Gouri. **Nyaya darsana apavarga.** Calcutta.

2. Das, Sunil Kumar. **Navyanyayesamsargatavada. D.Litt.** Rabindra Bharati.

3. Prabhakar, M. **An examination into ethico-philosophical implications of Yoga.** Osmania.

4. Suryanarayana, A. **Theism in Visistadvaita: A critical study with special reference to Sri Ramanuja.** Venkateswara. Dr K Munirathnam Chetty, Reader, Department of Philosophy, Sri Venkateswara University College, Tirupati.

Fine Arts

Music

1. Batra, Seema. **Himachal Pradesh ke ucchtar madhyamik vidyalayon mein sangeet shiksha ka vishleshanatmak adhyayan.** HP.

2. Goswami, Swapan Kumar. **An account of Indian views on aesthetics of music.** Rabindra Bharati.

Drama

1. Mitra, Ranjit Kumar. **Mancha bibartan-o-drishya dhara.** Rabindra Bharati.

Language & Literature

English

1. Aijaz Haider. **Ethics and aesthetics of the short story with special reference to E A PO & O Henry and James Joyce.** Magadh.

2. Das, S. **Nirad C Chaudhuri's critical vision: A study of his major works.** NEHU. Dr S Homchaudhuri, Department of English, North-Eastern Hill University, Shillong.

3. Gayathri Devi, A. **R K Narayan's short stories: A study.** Gulbarga. Dr G S Balram Gupta, Department of English, Gulbarga University, Gulbarga.

4. Guha, Ananya Sankar. **Tradition and modernism in the novels of William Golding.** NEHU. Prof N Hassan, Department of English, North-Eastern Hill University, Shillong.

5. Hariprasanna, A. **The world of Malgudi: A study of R K Narayan's novels.** Venkateswara.

6. Madhava Bhat, H. **Vision of social change: A critical study of the novels of Chinua Achebe and Shivarama Karantha.** Karnatak. Dr Sarojini B Shintri, Prof (Retd), Department of English, Karnatak University, Dharwad.

7. Mishra, Yashodhara. **Growth of the individual in John Steinbeck's novels.** Durgawati. Dr D K Moitra, Sunny Apartment, Bose Colony, Narbada Road, Jabalpur.

8. Misra, Partha Sarathi. **A contrastive analysis of English and dimasa phonology in a generative frame work.** Calcutta.

9. Sucheta Rani. **Social vision of Theodore Dreiser's fiction.** Jammu. Dr D K Rampal.

10. Thomas, Palayoor. **The fusion of literary and theatrical techniques in Tenessee Williams.** Calicut. Dr Joseph Kolangaden, Kolazhy, Trichur.

Sanskrit

1. Chakrabarti, Manatosh. **Aryan culture in Assam.** Rabindra Bharati.

2. Chakrabarti, Prakashchandra. **A comprehensive study on Sudraka's Marichakatika.** Calcutta.

3. Pandey, Devideen. **Pratishakhyon evam shiksha granthon ka bhasha vaigyanik adhyayan.** Durgawati. Dr K K Chaturvedi, Prof and Head, Department of Sanskrit, Rani Durgawai Vishwavidyalaya, Jabalpur.

4. Pandey, Madhusudan. **Naishadhcharit mein bimb yojana.** Magadh. Dr M N Pathak, Reader, Postgraduate Department of Sanskrit, Magadh University, Bodh Gaya.

5. Pradhan, Banshidhar. **Vyadikrutashya paribhasa suchanasya sameekshyatamakamadhyayanam.** Jagannath. Pt. Purna Chandra Tripathy, Lecturer (Retd), Sadasiva Kendriya Sanskrit Vidyapith, At. Chitrakara Sahi, Puri.

6. Sarnah, Hiran. **An analytical study of the Gunas of the Samkhya system.** Gauhati. Dr Rajendra Nath Sarma, Reader, Department of Sanskrit, Gauhati University, Guwahati.

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Punjabi

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2. Khan, Jalaluddin Ahemad. **Women in pre-Gupta inscriptions.** Panjab.

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Dogri

1. Sharma, Neerja. **Dogri folk tales: An analytical study.** Jammu. Dr Champa Sharma.

Hindi

1. Anirudhan, B. **Maithilisharan Gupta aur Vallathol ke kavyon mein sanskritik chetana ka swaroop.** CUST. Dr L Suneetha Bai, Prof, Department of Hindi, Cochin University of Science and Technology, Cochin.

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3. Gobind Prasad. **Agyeya ke sahitya mein kaldrishti.** Delhi.

4. Itoria, Asha. **Chhayavadottar Hindi kavya mein pranaya bhavna.** Vikram. Dr (Smt) Manorma Bhatnagar, Department of Hindi, Government Girls College, Ujjain.

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10. Singh, Prem Kumari. **Hindi ke itihasik upanyason mein vyakta adhunik samajik chetna 1960 se 1980 tak ke upanyason ke**

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1. Khan, Ali Sher. **Literary contribution of Ghazipur towards the development of Urdu literature after independence.** Calcutta.

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Bengali

1. Chakrabarti, Srutinath. **Rabindra Natya kavyadhamita.** Calcutta.

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EDUCATION NEWS INDEX

A list of select articles and editorials on education from newspapers received in the AIU Library during May 1992

EDUCATIONAL PHILOSOPHY

Clement, A. Unchallenged by ethical norms. **The Hindu** 5.5.92.

Mathur, V S. Nehru and students. **The Tribune** 31.5.92.

EDUCATIONAL PSYCHOLOGY

Mojumdar, Modhumita. Need to check exam phobia. **The Statesman** 3.5.92.

Mony, Aiyavoo T. Developing listening skills. **The Hindu** 5.5.92.

Nazeer, M. Team work ensures higher achievement. **The Hindu** 26.5.92.

EDUCATIONAL SOCIOLOGY

Agrawal, Purshottam. Right to dissent. **The Pioneer** 11.5.92.

Ahmed, Firoz Bakht. Jamia disrupted by bigots. **Patriot** 10.5.92.

ALL FREE thinkers, beware (Editorial). **The Pioneer** 10.5.92.

Basant, Prabhat. Jamia is sinking. **The Pioneer** 11.5.92.

Bidwai, Praful. Of Muslims and liberals: Jamia stir proves communalists wrong. **The Times of India** 20.5.92.

DasGupta, Swapan. Satanic tremors from Jamia Millia. **The Telegraph** 11.5.92.

Dharma Kumar. Jamia: Blackmail not minority rights. **The Times of India** 11.5.92.

END THIS trauma (Editorial). **The Tribune** 8.5.92.

Iqbal Masud. Prof Mushirul Hasan is on dangerous ground. **The Pioneer** 7.5.92.

Kaul, Malavika. Locking horns in Jamia. **The Pioneer** 10.5.92.

Kuldeep Kumar. In search of a beacon. **The Pioneer** 10.5.92.

MAY SANITY prevail (Editorial). **The Hindustan Times** 8.5.92.

MINORITIES COMMISSION (Editorial). **The Hindu** 9.5.92.

MR HASAN'S crime (Editorial). **The Statesman** 21.5.92.

Nayar, Kuldip. Liberal Muslims stay away. **The Statesman** 13.5.92.

Noorani, A G. Rushdie revived-I: Tale of the zealous convert. **The Statesman** 29.5.92.

————. Rushdie revived-II: More than just a family quarrel. **The Statesman** 30.5.92.

PLEASE EXPLAIN, Mr Khurshid (Editorial). **The Pioneer** 16.5.92.

PROBE KHURSHID'S role (Editorial). **Indian Express** 16.5.92.

PROF HASAN must stay (Editorial). **The Hindustan Times** 14.5.92.

Saeed Naqvi. Muslim leaders fiddle as Jamia burns. **The Pioneer** 3.5.92.

————. Jamia: Is Salman Khurshid the villain? **The pioneer** 24.5.92.

Salman Khurshid. "I don't need to control Jamia". **The Hindustan Times** 17.5.92.

Sanghvi, Vir. No matter who it offends. **The Telegraph** 24.5.92.

SANITY ON the campus (Editorial). **Patriot** 20.5.92.

Sethi, Harsh. Learning from Jamia. **The Hindustan Times** 26.5.92.

Soroor Ahmed. Jamia Millia imbroglio. **Free Press Journal** 30.5.92.

SPEAKING UP (Editorial). **The Telegraph** 4.5.92.

Sundar Rajan, K R. God save us from our intellectuals! **The Pioneer** 12.5.92.

TOO RESTRICTIVE (Editorial). **Deccan Herald** 18.5.92.

TRADITION IN peril (Editorial). **The Tribune** 24.5.92.

Venkateshwar Rao, Parsa. Jamia Millia Islamia: Discordant notes. **Indian Express** 10.5.92.

EDUCATIONAL POLICY & PLANNING

Amrik Singh. Refashioning a flawed policy. **Deccan Herald** 29.5.92.

Avtar Singh. Education: A low priority area. **The Assam Tribune** 4.5.92.

Chakraborty, Bhabatosh. Revised national policy on education. **National Herald** 30.5.92.

EDUCATION POLICY, 1986 (Editorial). **Patriot** 12.5.92.

EDUCATION SUFFERS (Editorial). **The Hindustan Times** 25 5.92.

Mathur, V S. Education that India needs. **The Assam Tribune** 18.5.92.

Mojumdar, Modhumita. Education needs a close look. **The Statesman** 24.5.92.

PLAN AND primary education (Editorial). **Free Press Journal** 26.5.92.

PLUS-TWO in school (Editorial). **The Times of India** 9.5.92.

SIGNIFICANT STRANDS of education policy (Editorial). **The Hindu** 13.5.92.

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Aggarwal, K K and Sanghi, G L. Liability under the law. **The Hindustan Times** 24.5.92.

Amrik Singh. Higher education: At what cost? **The Hindustan Times** 21.5.92.

———. Towards college autonomy. **The Tribune** 14.5.92.

Atma Ram. Education: Role of parents and teachers. **The Tribune** 17.5.92.

Basu, Uday. Steps to discipline 'errant' teachers in Bengal. **The Statesman** 7.5.92.

BLUNDERING AT the IIT (Editorial). **Indian Express** 30.5 92.

Hari Das, P. Amendment to private colleges act: An analysis. **The Hindu** 15.5.92.

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Joshi, K C. Decay in the groves of academe. **Indian Express** 15.5.92.

Mitra, Asok. Writing on the broken wall. **The Telegraph** 9.5.92.

Philip, A J. Ferment in AMU. **The Hindustan Times** 6.5.92.

Rajagopalan, T. Role of academic staff colleges. **The Hindu** 13.5.92.

Rego, Stephen. Keep the admission fire burning. **Free Press Journal** 10.5.92.

———. Minor rights have a major weight. **Free Press Journal** 10.5.92.

Sharma, D R. Academic autonomy. **The Tribune** 17.5.92.

Sinha, S P. Expansion without consolidation. **The Hindu** 12.5.92.

Wadhawan, Ravi K. For sale: A fraud medical degree for Rs 2000. **The Pioneer** 11.5.92.

EDUCATION & POLITICS

DOCTORING THE order (Editorial). **The Times of India** 29.5.92.

Samel, Somnath. Playing politics with education. **Patriot** 12.5.92.

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Arunachalam Kumar. Hazard of the overweight satchel. **The Hindu** 12.5.92.

Bose, M N K. Reviewing English curriculum. **The Hindu** 5.5.92.

Nageswara Rao, E. American literature: A novelty and freshness. **The Hindu** 12.5.92.

Ramadoss, Haripriya. Missing out on the joys of summer. **The Hindu** 3.5.92.

Seshagiri Rao, D. Fantasy in the curriculum. **Deccan Herald** 8.5.92.

Srinath, Padma. Third R. **The Hindu** 3.5.92.

Sundararajan, Saroja. Homework for the holidays. **The Hindu** 3.5.92.

LANGUAGE & LANGUAGE POLICY

Desai, V H and Mukherjee, A K. Do we need a national language? **Deccan Chronicle** 17.5.92.

Khullar, K K. Popularising Sanskrit in India. **The Assam Tribune** 5.5.92.

Kumar, R Mohan Kanaga. 'Tamilising' frontiers of knowledge. **Indian Express** 22.5.92.

Mahajan, V S. Should English take a back seat? **The Tribune** 19.5.92.

Maliya, N Purushothama. Case for Konkani as national language. **Deccan Herald** 22.5.92.

Mojumdar, Modhumita. 'Stuck up' on English. **The Hindu** 3.5.92.

PROMOTE URDU (Editorial). **Deccan Herald** 20.5.92.

VOCATIONAL EDUCATION

Dileep, Lalita. Programming for the future. **Indian Express** 3.5.92.

Patwardhan, Rahul. Progressive careers: Computer education dispelling some myths. **The Times of India** 6.5.92.

Phegade, G D. Business education: How profitable? **Free Press Journal** 31.5.92.

Sharma, Pranjal and others. Training turfs for tougher times. **The Economic Times** 16.5.92.

Verma, Raghavendra. Bright prospects in hotel management. **The Pioneer** 22.5.92.

DISTANCE EDUCATION

Kanwaldeep Singh. Distance Education Council: Trying to rejuvenate correspondence courses. **Indian Express** 30.5.92.

Mutthirulandi, Raja. Open universities, an acceptable alternative. **The Hindu** 19.5.92.

Shankar Narayan, D. Are open universities workable? **Deccan Herald** 15.5.92.

———. Open universities: Pros and cons. **Deccan Herald** 22.5.92.

TEACHERS & TEACHING

Amrik Singh. Student assessment of teachers vital. **The Times of India** 2.5.92.

Mangala, C N. Why can't students choose their teachers? **Deccan Herald** 22.5.92.

Shamsuddin. Role of teachers in a changing society. **National**

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EDUCATIONAL EVALUATION

Amrik Singh. Politics of mass copying. **Deccan Herald** 1.5.92.

Azaz Ashraf. Cogs in a wheel. **The Pioneer** 3.5.92.

Gopala Krishna, L N. Correcting evaluation. **Deccan Herald** 8.5.92.

Peter, Benny. For effective student assessment. **Deccan Herald** 25.5.92.

Tripathi, Akhilesh. Anti-copying ordinance in U P. **Free Press Journal** 27.5.92.

ECONOMICS OF EDUCATION

LEARNING FROM one another (Editorial). **The Assam Tribune** 24.5.92.

LIBRARIES & BOOKS

Anantamurthy, U R. New concerns for book trust. **Deccan Herald** 1.5.92.

Gopinath, K. Intellectual property rights: Opting for the lesser evil. **The Economic Times** 13.5.92.

Joshi, G V. Preserving old books. **Deccan Chronicle** 3.5.92.

Jussawalla, Adil. Illness as compulsive reading. **The Tribune** 10.5.92.

Kurup, E Jayashree. Bringing readers to book. **The Times of India** 23.5.92.

Prasad, S. Caravan of books. **Deccan Herald** 15.5.92.

Sankaranarayanan, Bhuvana. Book publishers in a bind. **Deccan Herald** 1.5.92.

Satyanarayana, K. What ails Indian science journals? **The Hindu** 12.5.92.

SECOND-HAND reading(Editorial). **The Statesman** 16.5.92.

Surya, Vasantha. How scientific and secular are our history books? **The Hindu** 19.5.92.

STUDENTS & STUDENT ACTIVITIES

WHEN BIGOTRY is all (Editorial). **The Tribune** 1.5.92.

WOMEN'S STUDIES

Menon, Leela. Women need more than literacy. **Indian Express** 13.5.92.

ADULT EDUCATION

DOES EDUCATION pay? (Editorial). **National Herald** 22.5.92.

FAILURE OF a mission (Editorial). **The Hindustan Times** 19.5.92.

Nagaraja, Bhargavi. Helping people help themselves. **The Hindu** 24.5.92.

Vyas, Sudhir. Novel adult literacy scheme not practical. **Deccan Herald** 28.5.92.

ELEMENTARY & SECONDARY EDUCATION

Singh, Satish Kr. Public school education for all. **Patriot** 19.5.92.

INSTITUTIONAL PROFILE

Venkata Reddy, K. Commonwealth of learning: Aims and objectives. **The Hindu** 5.5.92.

BIOGRAPHICAL PROFILE

Parihar, Subhash. Death of a tireless historian: Dr Hari Ram Gupta. **The Tribune** 3.5.92.

SHRI JAGANNATH SANSKRIT VISHVAVIDYALAYA

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Comptroller of Finance

CALENDAR OF EVENTS

Proposed Date of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/ Officer to be Contacted
July 28-30, 1992	Fourth International Conference on Assessing Quality in Higher Education	To promote awareness of current issues and perspectives on the assessment of quality in higher education	University of Twente Enschede, The Netherlands	Mr. Trudy W. Banta Director, Center for Assessment Research and Development, The University of Tennessee, 1819 Andy Hold Avenue, Knoxville, Tennessee 37996-4350
August 11-16, 1992	8th World Congress for Rural Sociology	Theme : Rural Society in the Changing World Order	International Rural Sociology Association, USA	The Pennsylvania State University, 306, Agricultural Administration Building, University Park, Pennsylvania - 16802
August 16-19, 1992	55th Annual Meeting of the Rural Sociological Society	Theme : Rurality and the Global Environment	Rural Sociological Society, USA	-do-
August 25-28, 1992	Second Afro-Asian Psychological Congress	Theme : Psychology for Social Development and Human Welfare	The Chinese Psychological Society	Prof. Wang Su, Congress Secretariat, Department of Psychology, Peking University, Beijing-100871
August 26-28, 1992	Second International ISKO Conference on Cognitive Paradigms in Knowledge Organisation	To provide a forum for scholars working in the field of knowledge organisation	Madras Library Association in collaboration with Sarada Ranganathan Endowment for Library Science and University of Madras	Mr. S. N. Kumar Conference Secretariat, 5, Sivaganga Road, Madras-600 034
September 21-23, 1992	Sixth Annual Conference of the Asian Association of Open Universities	Theme : The Role of Open Universities in promoting Education for All	Korean Society for the Study of Distance Education	Dr. In Sung Jung, Secretariat, AAOU 1992 Annual Conference C/O Korea Air and Correspondence University 169, Dongsung-Dong, Chongro-Ku, Seoul 110-791, Korea
October 26-31, 1992	Third IAU Mid-Term Conference to be held at Alexandria, Egypt	Theme:Adaptation of University Management Structures and Strategies for New Requirement	International Association of Universities (IAU), France	Dr Franz Eberhard, Secretary General, International Association of Universities, 1, rue Miollis. 75732 Paris Cedex 15 France
November 9-13, 1992	16th World Conference on Distance Education for the Twenty-First Century	To give a view of the aspects of development in Distance Education in the Twenty-First Century	International Council for Distance Education, in cooperation with Sukhothai Thammathirat Open University (STOU), Thailand	Mr. Bruce Scriven, Program Chair—16th World Conference of ICDE, Queensland University of Technology, Locked Bag No. 2, Red Hill Queensland 4059, Australia
November 18-20, 1992	VIII Carbohydrate Conference	Exchange of information on recent advances in Carbohydrate research	The Association of Carbohydrate-Chemists and Technologists (India) in collaboration with Regional Research Laboratory, Trivandrum	Dr. Ashok Pandey, Convener or Dr. K.C.M. Raja, Organising Secretary, VIII Carbohydrate Conference, Regional Research Laboratory, Trivandrum-695019
December 14-31, 1992	Short Term Course on Polymeric Materials Product Technology (PMPT-92)	To provide an insight into the specialised behaviour of Polymeric Materials.	Materials Science Centre, IIT, Kharagpur	Dr. Ajit K. Banthia Coordinator, PMPT-92, Materials Science Centre, Indian Institute of Technology Kharagpur - 721302

INDIAN VETERINARY RESEARCH INSTITUTE

Izatnagar - 243122, Bareilly, U.P.

ADMISSION NOTICE, 1992-93

A competitive written examination for admission to the Master's and Doctoral degree programmes starting from September, 1992 in the following disciplines will be held at this Institute on Thursday, the **6th August, 1992**. The written test will be followed by interview for the Doctoral candidates only which will be held on **7.8.92**.

A. DOCTORAL PROGRAMME [Ph.D]

1. Animal Breeding
2. Animal Genetics
3. Animal Nutrition
4. Animal Physiology
5. Biochemistry
6. Extension Education
7. Livestock Products Technology
8. Poultry Science
9. Veterinary Bacteriology
10. Veterinary Immunology
11. Veterinary Gynaecology & Reproduction
12. Veterinary Parasitology
13. Veterinary Pathology
14. Veterinary Medicine
15. Veterinary Pharmacology
16. Veterinary Surgery
17. Veterinary Virology

ELIGIBILITY FOR APPLYING

(i) At least 60% marks in aggregate (55% for SC/ST) in Master's Degree examination in the relevant subject.
(ii) A good knowledge of English is essential.

B. MASTER'S PROGRAMME [M.V.Sc./M.Sc.]

1. Animal Genetics & Breeding
2. Animal Nutrition
3. Animal Physiology
4. Avian Diseases
5. Biochemistry
6. Biostatistics
7. Biotechnology
8. Epidemiology
9. Livestock Production & Management
10. Extension Education
11. Livestock Products Technology
12. Poultry Science
13. Veterinary Bacteriology
14. Veterinary Immunology
15. Veterinary Gynaecology & Reproduction
16. Veterinary Medicine
17. Veterinary Pathology
18. Veterinary Parasitology
19. Veterinary Public Health
20. Veterinary Pharmacology
21. Veterinary Surgery
22. Veterinary Virology

ELIGIBILITY FOR APPLYING

(i) At least 60% marks in aggregate (55% for SC/ST) in Bachelor's Degree in Veterinary Science/Agriculture (with Animal Science as elective)/Statistics. The detailed eligibility qualifications are available in the Information Bulletin.

HOW TO APPLY

Information Bulletin containing application form can be had personally from the University Office of the Institute on cash payment of Rs. 15/- at University Counter on any working day between 11.00 A.M. to 1.00 P.M. and 2.00 P.M. to 3.30 P.M. or through post by sending requisition to the Asstt. Administrative Officer (Academic), I.V.R.I., Izatnagar-243122, District Bareilly (U.P.), alongwith a crossed Bank Draft for Rs. 25/- for each form, drawn in favour of the Director, IVRI, Izatnagar, payable at State Bank of India, CARI Branch, (Code No. 7027), Izatnagar, U.P., accompanied by self-addressed unstamped enveloped, measuring 28 cm x 20 cm.

Note :

1. 60% marks will be considered equivalent to an OGPA 2.10 out of 3; 2.80 out of 4; 3.50 out of 5.00 and 7.00 out of 10.00 GPA system.
   55% marks will be considered equivalent to an OGPA 1.94 out of 3; 2.58 out of 4; 3.23 out of 5.00 and 6.45 out of 10.00 GPA system.
2. Candidates should have completed the qualifying degree requirements for admission at the date of appearing in the written examination and should produce the proof of the same at the time of the written examination.
3. A candidate may indicate two disciplines of his choice in order of preference in the column provided in the application form according to the eligibility qualifications.
4. 15% and 7½% seats are reserved for SC and ST candidates, respectively.
5. The SC/ST candidates appearing for written examination will be paid travelling allowance limited to II class Railway fare, both ways, on production of caste certificate in original and evidence of journey performed.
6. Final selection will be based on academic career, performance in the competitive examination and interview. No interview will be held for Master's programme.
7. The venue, date and time-table for examination/interview are available in the Information Bulletin.
8. No. of Seats : Seats in each discipline will normally be restricted to 2-5, subject to variation, keeping in view the facilities in concerned discipline at the time of admission.
9. Financial assistance in the form of IVRI Fellowship (Junior/Senior) shall be offered to the selected students on certain terms and conditions.
10. Application forms will be issued from 25-6-92 to 20-7-92.
11. Last date for receipt of the application forms duly filled in, is **20-7-92**, either by post or on the counter. Postal delay in receipt of application form by the due date will not be the responsibility of the Institute.

H.C. Tripathi
Scientific Coordinator (Univ.)

कला-संस्कृति के शिक्षण का एकमात्र विश्वविद्यालय

इंदिरा कला संगीत विश्वविद्यालय, खैरागढ़ (म० प्र०)

विशा/1/सा. वि./र/92/3685

प्रवेश सूचना सत्र 1992-93

दिनांक 5/6/92

संगीत, नृत्य, चित्रकला एवं भारतीय कला का इतिहास एवं संस्कृति तथा कर्नाटक संगीत (गायन एवं वाद्य) एवं भरतनाट्यम, लोक संगीत विषय के स्नातक, स्नातकोत्तर एवं डिप्लोमा पाठ्यक्रमों में प्रवेश हेतु यदि आप उत्सुक हैं तो कृपया अपना आवेदन-पत्र इस विश्वविद्यालय को 31 जुलाई 92 के पूर्व भजें। विदेशी छात्रों के लिए संक्षिप्त (Condense) पाठ्यक्रम उपलब्ध है। छात्र-छात्राओं हेतु अलग-अलग छात्रावास की व्यवस्था है। सर्वोत्तम ग्रंथालय तथा श्रवण कक्ष (लिसनिंग रूम) उपलब्ध है। पी. एच. डी. तथा डी. म्यूज. के लिये छात्र-छात्राओं का पंजीयन होता है। प्रतिभावान छात्रों को कुछ छात्रवृत्ति गुणानुक्रम एवं निर्धनता के आधार पर प्रदान की जाती है। लोक संगीत में बुनियादी प्रशिक्षण संस्था के प्रत्याशियों हेतु अलग से डिप्लोमा पाठ्यक्रम है।

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खैरागढ़ (म० प्र) - 491 881

(म क गंगाजलिवाले)
कुलसचिव

UNIVERSITY GRANTS COMMISSION

Bahadurshah Zafar Marg, New Delhi-110002

Applications are invited for the award of **60 Research Fellowships** in Engineering and Technology for the year 1992-93.

VALUE : The value of Research Fellowship is Rs. 2400/- p.m. for first two years and Rs. 2500/- p.m. for subsequent years. The fellowship carries an annual contingent grant of Rs. 7500/- for meeting authorised contingent expenditure connected with the research work.

ELIGIBILITY : Fellowships are open to persons preferably below the age of 40 years who have got a Masters' Degree in Engineering/Technology/ Pharmacy with atleast 55% marks from a recognised University and passed GATE/Joint UGC-CSIR JRF examination and have shown aptitude for research work. Woman candidates are eligible upto 50 years.

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OTHER CONDITIONS : * The candidates wishing to avail the fellowship in Geology & Geophysics need not apply. * Research Fellows who are already doing Ph.D. in Science departments of the Universities need not apply. The fellowship is only meant for doing Ph.D. at Technical Institutions/ deptts. * The candidates who had applied in response to earlier advertisements have to apply afresh .

PROFORMA

Application form for Research Fellowship in Engineering & Technology.
(The form must be filled carefully in BLOCK letters. Incomplete forms are liable to be rejected).

1. Name (in block letters with surname underlined) Shri/Smt./Kumari ....
2. Date of Birth .... 3. Nationality ....
4. Father/Husband's Name .... 5. (a) Present Address .... (b) Permanent Address ....
6. If belonging to Scheduled Caste/Tribe, State name of the Caste/Tribe : ....
7. Particulars of Educational qualifications, starting with Matriculation onward. (Please attach attested copies of marksheets, certificates, diplomas etc. and give a reference in the last column) :

Examination passed & year of passing	School/College/ University	Subjects Offered	Division/ Grade	Percentages of marks/ cumulative grade point	Encl. No.

8. Particulars of GATE/Joint UGC-CSIR examination passed : (Attested photocopy of certificate to be enclosed)

Name of the Examination	Year	Roll No.

9. Give particulars of the Research problem you wish to undertake at Ph.D. level :
   (a) Subject : (b) Specialisation within the subject : (c) Title of Research problem : (in block letters)
   (d) Details of papers published (if any) with a copy of the reprints, details of publications may be given on a separate sheet of paper:
   (A brief abstract not exceeding 500 words on the proposed research work, methods of approach etc. must be sent along with the application, without which the application will be treated as incomplete).
10. Please state :
    (a) Whether you are already registered or propose to register for research work leading to award of a doctorate degree:
    (b) Date of Registration : (c) Name of the University/Institution & Department :
11. If already drawn a scholarship or a fellowship, give particulars below :

Source of Scholarship/Fellowship	Value & Date of Commencement	Date upto which tenable	Whether the work has been completed/is in progress

12. Present occupation (if employed, indicate the nature of employment and emoluments drawn per month) :
13. Do you suffer from any physical disability? If so please give details :
14. Any other information relevant to the research work, which you may like to give in support of your application :

DECLARATION

I hereby declare :

I undertake to engage myself whole time for work on the subject under the direction of the supervisor during the tenure of fellowship. I declare that to the best of my knowledge and belief, the particulars given in the form are correct.

Place :
Date :

(Signature of the Candidate)

For use by University/College

It is certified that necessary facilities will be provided for the research work of .... Recommendation of the forwarding authority : (views of the Supervisor/Head of the Department regarding the candidate's suitability for the award would be obtained seperately and enclosed with the application).

Place:
Date:

Signature
Registrar/Principal
University/College

davp 823(1)92

University of North Bengal

Raja-Rammohunpur (Darjeeling) Pin. 734430

UNIVERSITY PUBLICATIONS

1. The Meches and Totos
2. Vidyasagar Smwaranika
3. Vidyasagar Nirbachita Rachana : Sahitya-O-Samaj
4. Manik Datter Chandimangal
5. North Bengal University Review (Humanities and Social Sciences)
6. North Bengal University Review (Science and Technology)
7. Iconography of Sculptures
8. The Himalayas by Professor S.K. Chaube
9. Akshyay Kumar Maitreya : Jivan-O-Sadhana
10. Akshyay Kumar Maitreya Museum : Catalouge-I
11. Early Historical Perspective of North Bengal
12. Academy Nibandhabali (Nepali)
13. Fall of the Pal Empire
14. Tri-Lingual Dictionary (Nepali-English-Bengali)
15. Bistrita Bangla Puthi (Volume I to V)
16. The Himalayas by A. Basu
17. Bengali Department Patrica
18. English Department Journal

Available at **: Publication Bureau,**
Office of the Registrar,
North Bengal University

S.N.D.T. COLLEGE OF EDUCATION FOR WOMEN

(Conducted College of SNDT Women's University, Bombay)

Karve Road, Pune - 411 038

Applications for the following courses are invited for eligible women candidates.

Course	**Medium**	**Eligibility**
M.Ed.	English and Marathi	B.Ed. of any recognised University
M.Phil. (Education)	English	M.Ed. of any recognised University

For application forms and details, send Postal Order of Rs. 10/- with self-addressed stamped envelope.

Last date of receipt of applications :

5th July, 1992 for M.Ed. and
5th August, 1992 for M.Phil

PRINCIPAL

CLASSIFIED ADVERTISEMENTS

NIZAM'S INSTITUTE OF MEDICAL SCIENCES
(A University Established Under the State Act)
PANJAGUTTA,
HYDERABAD - 500 482, A.P.

EMPLOYMENT NOTIFICATION

Applications are invited for the following posts :

FACULTY

- i) Professor in Gastroenterology (Rs. 5900-200-7300 + NPA)
- ii) Associate Professor in Neurosurgery (Rs.4100-125-4850-150-5300+NPA)
- iii) Assistant Professors (Rs. 3500-125-4500 + NPA) – Two each in Cardiology and Hospital Administration; one each in Anaesthesiology, Cardiothoracic Surgery, General Medicine, General Surgery, Vascular Surgery, Nephrology, Neurosurgery, Microbiology & Neurology.

RESIDENTS

Senior Residents in Cardiology, Neurology, Nephrology, Neurosurgery, Vascular Surgery, Anaesthesiology, General Surgery, Pathology and Microbiology.

NON-FACULTY

Bio-Medical Engineer Grade I (Rs.1980-80-2780-90-3500) with BE (Bio-Medical Engineering) and 3 years' experience in the maintenance and servicing of medical equipment in Corporate Hospital of not less than 500 beds strength.

Prescribed application form and details of qualifications and experience required for each post can be had by sending a Demand Draft for Rs. 100/- obtained in favour of Director, Nizam's Institute of Medical Sciences, along with a self-addressed stamped envelope of Rs. 9/- or by paying cash in person.

The Institute reserves the right either to fill up or not to fill up any of the posts advertised and also decrease or increase the number of posts at the time of actual selection. Last date for receipt of applications is 10th July, 1992.

Dr. D. Raja Reddy
DIRECTOR

COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY
KOCHI - 22

REQUIRES

A. **REGISTRAR**
(Temporary but likely to be continued)

1. **Qualifications :**
   - i) A post-graduate degree with at least 55% marks or its equivalent grade.
   - ii) At least fifteen (15) years' teaching experience of which eight (8) years should be in Reader's grade with experience in Educational Administration.

   Desirable :
   A Doctoral Degree in any field.

2. **Age :**
   Not more than fifty years as on 1st January 1992.
   Relaxable in the case of candidates who are in the service of any of the Universities in Kerala.

3. **Scale of Pay :** Rs. 4500-7300

माखन लाल चतुर्वेदी राष्ट्रीय पत्रकारिता विश्वविद्यालय ,भोपाल

प्रवेश सूचना–1992–93

माखनलाल चतुर्वेदी राष्ट्रीय पत्रकारिता विश्वविद्यालय की स्थापना मध्यप्रदेश सरकार द्वारा एक अधिनियम के अन्तर्गत की गई है। इसे पत्रकारिता और जनसंचार के विविध क्षेत्रों में ज्ञान के विस्तार और विकास के एक श्रेष्ठ केन्द्र के रुप में विकसित किया जा रहा है। इस विश्वविद्यालय में पत्रकारिता और जनसंचार के शिक्षण, अनुसंधान, प्रकाशन और विविध विस्तार कार्यकम आयोजित किये जाते है। विश्वविद्यालय के प्रबन्धन और शिक्षण प्रशिक्षण का दायित्व शीर्षस्थ पत्रकार और जनसंचार विशेषज्ञ संभाल रहें है।

विश्वविद्यालय द्वारा चलाये जा रहे अपनी तरह के पहले पाठ्यक्रमों के लिए अखिल भारतीय प्रवेश परीक्षा उत्तर भारत के विभिन्न प्रमुख नगरों में रविवार 2 अगस्त 1992 को आयोजित की जा रही है।

★एक वर्षीय स्नातक उपाधि पाठ्यक्रम

(1) पत्रकारिता, (2) सरकारी तथा सार्वजनिक क्षेत्र में जनसम्पर्क (3) पुस्तकालय तथा सूचना विज्ञान

न्यूनतम अर्हताएं :– किसी भी संकाय में कम से कम पचास प्रतिशत अंक के साथ स्नातक उपाधि। आयु 1 अगस्त 1992 को अधिकतम 25 वर्ष।

★एक वर्षीय स्नातकोत्तर डिप्लोमा पाठ्यक्रम

समाचार पत्र प्रबंधन :–

न्यूनतम अर्हताएं– किसी भी संकाय में कम से कम पचास प्रतिशत अंक के साथ स्नातक उपाधि, आयु 1 अगस्त 1992 को अधिकतम 25 वर्ष। (समाचार पत्रों से प्रायोजित व्यक्तियों को 10 वर्ष की छूट दी जायेगी)

★एक वर्षीय स्नातकोत्तर उपाधि पाठ्यक्रम

आदिवासी एवं जनजाति संचार

न्यूनतम अर्हताएं – किसी भी संकाय में कम से कम पचास प्रतिशत अंक के साथ स्नातकोत्तर उपाधि, (समाज विज्ञान, सामाजिक कार्य, ग्रामीण विकास, अर्थशास्त्र, सांख्यिकी, मनोविज्ञान में उपाधि धारकों को प्राथमिकता दी जायेगी)। आयु 1 अगस्त 1992 को अधिकतम 25 वर्ष।

सभी पाठ्यक्रमों के लिये 20–20 स्थान रखे गये हैं।

विस्तृत विवरण एवं आवेदन पत्र के लिए 50 रुपये का डिमांड ड्राफ्ट अथवा पोस्टल आर्डर जो कार्यपालन निदेशक, माखनलाल चतुर्वेदी राष्ट्रीय पत्रकारिता विश्वविद्यालय भोपाल के नाम से देय हो, निम्नलिखित पते पर दिनांक 5 जुलाई 1992 तक भेजें। भरे हुये आवेदन पत्र प्राप्त होने की अंतिम तिथि 10 जुलाई 1992 है।

कार्यपालन निदेशक,
माखनलाल चतुर्वेदी राष्ट्रीय पत्रकारिता विश्वविद्यालय
पोस्ट बाक्स नं. 60 ,रवि शंकर नगर भोपाल, पिन – 462016

ATUL

B. PROFESSOR / TECHNICAL OFFICER (III)

1. **Qualifications :**
   - i) An eminent scholar with published work of high quality actively engaged in research with 10 years of experience in postgraduate teaching and/or research of the University/National level institution, including experience of guiding research at Doctoral level.

     OR

     An outstanding scholar with established reputation who has made significant contribution to knowledge.
   - ii) Experience in any branch of Instrumentation.

2. **Age :**

   Not more than 50 years as on 1.1.1992 (Relaxable up to 5 years and 3 years to SC/ST and OBC candidates respectively)

   Age limit prescribed is not applicable to those who are in University service.

Note :-

The application forms along with the further requirements of the posts can be had on payment of Rs. 15/- at the University Cash Counter before 3.00 p.m. on working days. Application forms can also be had by post if requested along with a Demand Draft for Rs. 15/- drawn on or after the date of this notification and payable to the Registrar, Cochin University of Science and Technology at SBT Trikkakara Branch and a self-addressed envelope (23x10 cm) bearing postal stamps worth Rs. 3/-. The request for application form by post received after 30.6.1992 will not be entertained. The SC/ST candidates can have the application forms free of cost. The last date for receipt of the filled up application along with the Registration fee of Rs. 25/- (Rs. 6/25 for SC/ST candidates) and copies of the documents to prove age, community, qualification and experience in the office of the Registrar is 8.7.1992. Late and defective application will be summarily rejected.

No. Ad. A1.27/92 K. Madhusoodanan Nair
May 29 1992 Joint Registrar-in-Charge

CH. CHARAN SINGH HARYANA AGRICULTURAL UNIVERSITY, HISAR

Advertisement No. 4/92

Applications are invited for the temporary post of Professor (Child Development) in Rs. 4500-7300 plus allowances admissible as per University rules on the prescribed form obtainable alongwith details of qualifications and other conditions from the Assistant Registrar (R) be sending self-addressed unstamped envelope size (23 x 10 cm) alongwith IPO of Rs. 5/- in the name of Assistant Registrar (E) payable at CCSHAU , Hisar post office. The said application form duly completed with prescribed fee should reach the Registrar, CCSHAU, Hisar - 125 004 by 13.7.1992 (28th July, '92 for candidates residing abroad). In-service candidates should apply through proper channel.

REGISTRAR

VIDYASAGAR UNIVERSITY
MIDNAPORE : 721 102

Advertisement No. T.O.-3/1992

WANTED

PROFESSOR
(Rs. 4500-150-5700-7300)

1. One in Bengali

READERS

(Rs. 3700-125-4950-150-5700)

2. One in Bengali
3. One in Commerce with Farm Management
4. One in Chemical Science & Technology
5. One in Economics with Rural Development

LECTURERS (Rs. 2200-75-2800-100-4000)

6. One in Political Science with Rural Administration
7. One in English
8. One in Library and Information Science

DEPUTY CONTROLLER OF EXAMINATIONS

(Rs. 3700-125-4950-150-5700)

9. One

ESSENTIAL QUALIFICATIONS

(i) **for Post No. 1 :**
Scholarship of a high order, publications of high quality and active engagement in research. About ten years' experience of teaching and/or research. Experience of guiding research at Doctoral level.

(ii) **for Posts 2 - 5 :**
- (a) Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in research or innovation in teaching methods/materials.
- (b) At least five years' experience of teaching and/or research provided that at least three of these years were in the position of Lecturer.

(iii) **for Posts 6 - 7 :**
Master's Degree in the relevant subject with at least 55% marks or its equivalent grade at M.A./M.Sc. or equivalent examination. Consistently good academic record.

(iv) **for Post No. 8 :**
- (1) MLISC/ADISC/(INSDOC/ISI) or its equivalent.
- (2) B.Sc.(Hons.) or M.Sc. in any one of the following subjects : Electronics, Physics, Mathematics, Statistics or MCA/DCA.

Note : Candidates must have at least 60% marks at the BLISC level.

(v) **for Post No. 9 :**
- (1) Uniformly good academic record with a B+ Master's Degree or its equivalent;
- (2) At least 10 years' experience in a position involving supervision, control and planning of examinations, administration of colleges or in an Institute of Higher learning or Government or other academic bodies; at least 5 years of the 10 years' experience be in higher position of high level administration;
- (3) Age not less than 35 years, relaxable in the cases of exceptionally qualified candidates.

DESIRABLE QUALIFICATIONS

(i) **for Posts 6 & 7 :**
Ph.D. or M.Phil degree in the relevant subjects;

(ii) **for Post No. 8 :**
- (1) Exposure to Computerised information handling
- (2) UGC - NET.

Note :Candidates (for post no. 8) may be asked to look on the terminal.

(iii) **for Post No. 9 :**
- (1) A Doctorate degree or published papers of high standard

  OR

  Experience of at least 10 years, in a fairly senior position in any academic institution like a college or a university or a research organisation.
- (2) It is essential to have experience of at least 3 years in conducting examinations either in an undergraduate teaching institution or in an institution of equivalent status.

SPECIALIZATION

for Posts No. 1 & 2 :
Linguistics / Folk Literature / Drama / Fiction / Literary / Criticism / Medieval Bengali Literature.

for Post No. 3 :
M.Com. with specialisation in Financial Management/Farm Management & Farm Accounting.

for Post No. 4 :
Open for any of the following branches : Inorganic Chemistry/Special Physical Chemistry/Special Organic Chemistry/Special Chemical Technology/Industrial Chemistry.

for Post No. 5 :
Agricultural Economics/Economic Theory/Econometrics.

for Post No. 6 :
M.A. in Sociology with Hons. in Political Science/M.A. in Political Science with specialisation in Sociology.

for Post No. 7 :
Fiction/American Literature/Grammar & Linguistics.

for Post No. 8 :
Computer applications in LISC having the knowledge of :
(a) BASIC, PASCAL and C languages;
(b) CDS/ISIS/and similar application software packages;
and
(c) WORDSTAR, d Base III+.

GENERAL INSTRUCTIONS

The Selection Committee can waive/relax any of the stipulated conditions in view of the overall suitability of a candidate. Selection need not necessarily be confined to those who will formally apply.

The candidates should apply in the following Format in duplicate along with a crossed Indian Postal Order (for Professor Rs. 15/-, for Reader and Deputy Controller of Examinations Rs. 10/-, for Lecturer Rs. 7/- only) made out in favour of Vidyasagar University, Midnapore. In the case of Schedule Caste/Schedule Tribe/Physically handicapped the Indian Postal Orders will be half of the amount for the respective posts.

All applications with supporting documents must reach the office of the Registrar on or before **8 July, 1992**. Post applied for must be clearly written on the top of the envelope in block letters.

Format For Application

1. Advertisement No. .... dated..................
2. Post applied for ....
3. Crossed IPO for : (a) No................ (b) date................. (c) amount...........
4. Name of the Applicant (Block letters): Name Surname
5. Father's/Husband's Name : ....
6. Date of birth : .... Age : .... Years : .... Months : .... days on the date of application.
7. Marital status : ....
8. Permanent Address : ....
9. Mailing Address : ....
10. Whether SC/ST/Handicapped (Certificate from appropriate authorities must be annexed).
11. Details of Educational qualifications (starting from High School/Matric onwards) with division/class and percentage of marks.
12. Area of specialisation : ....
13. Details of research experience including
    (a) Pre-doctoral;
    (b) Post-doctoral;
    (c) Project work etc.
14. Details of publications (Number published/accepted/in progress):
    (a) in professional/academic journals;
    (b) in proceedings of seminars/conferences;
    (c) books & monographs.
15. Experience of research guidance (Number completed/in progress) :
    (a) Ph.D. level; (b) Master's level; (c) Project work.
16. Languages known : Read / Write / Speak.
17. Details of employment :
18. Minimum salary expected :
19. Time required for joining :
20. Name and addresses of two referees (other than relatives)
21. Any other information.

I hereby declare that all information given in the application is true to the best of knowledge and belief.

Date : .... Signature of the Candidate.

DEPUTY REGISTRAR

UNION CHRISTIAN COLLEGE
(Affiliated to Mahatma Gandhi University, Kottayam)
POST BOX NO. 5, ALUVA - 683 102,
KERALA

WANTED for the Union Christian College, Alwaye - 683 102, Lecturers in Chemistry (Open and Community - Malankara Syrian, Marthoma Syrian and CSI) in leave vacancies. Age, qualifications, etc. as per UGC Norms. Apply within one month in the form available from the Manager on payment of Rs. 50/- with a self-addressed stamped envelope.

PRINCIPAL

Scholarships for Study Abroad and at Home

The publication includes schemes implemented by the Departments of Education, Culture, Sports, Science & Technology, Biotechnology, UGC, NCERT etc., and covers 56 schemes for foreign scholarships and 19 for study at home.

The publication has been divided into three parts :
a) Scholarships for Study Abroad offered by Foreign/Indian Government/Agencies;
b) Scholarships for Study in India offered by Government and other Agencies;
c) Scholarships for Study in Schools.

Paperback 1992 Price Rs 10/- net
postage Rs 10/-
(Registered post)

For Details Contact :

Deputy Secretary (*Publications*)
Association of Indian Universities
AIU House, 16 Kotla Marg, New Delhi - 110 002
Telephones : 331-0059, 2305, 2429, 3390 Telex : 31-66180 AIU IN

Important Publications of the Calcutta University

1.	Catalogue of Doctoral Dissertations	– A. Goswami	– Rs.100/-
2.	Pingala Chanda Sutra	– Sri Asoke Chatterjee Sastri	– Rs. 70/-
3.	Yoga Philosophy of Patanjali – (In English)	– H. Aranya	– Rs.125/-
4.	Upanishad Yoga and Patanjal Yoga	– Sri Asoke Chatterjee Sastri	– Rs. 80/-
5.	The Santals Insurrection of 1855-57	– Kali Kinkar Dutta	– Rs. 20/-
6.	Studies in Indian Antiquities	– H.C. Raychaudhury	– Rs. 55/-
7.	Elements of the Science of Language	– I.J.S. Taraporewala	– Rs. 60/-
8.	The Science of the Sulba	– Dr. B.B. Dutta	– Rs. 40/-
9.	Vaishnab Padavali (Chayan)	– Calcutta University	– Rs. 30/-
10.	Ekaler Choto Galpa Sanchayan	– Calcutta University	– Rs. 25/-
11.	Ekaler Kabita Sanchayan	– Calcutta University	– Rs. 25/-
12.	Ekaler Prabandha Sanchayan	– Calcutta University	– Rs. 35/-
13.	Ekaler Samalochana Sanchayan	– Calcutta University	– Rs. 30/-
14.	History of Sanskrit Literature	– S.N. Dasgupta	– Rs. 60/-
15.	Political History of Ancient India	– H.C. Raychaudhury	– Rs. 70/-
16.	Temples of Ranipur Jharial	– D.R. Das	– Rs.145/-
17.	An Introduction to Indian Philosophy	– Dr. S.C. Chatterjee	– Rs. 35/-
18.	Hundred Years of the Calcutta University – Part - I		– Rs. 35/-
19.	Studies on Hindi Idioms (Hindi Mahabharat) (Hindi Mahaburreh)	– Prativa Agarwal	– Rs. 75/-
20.	Hand Book of Endowments	– Calcutta University	– Rs. 30/-
21.	Calcutta University Hand Book		– Rs. 30/-
22.	History of Sanskrit Literature	– Dr. R.N. Dasgupta & S.K. Dey	– Rs. 60/-
23.	Human Journey	– Edwin A. Burtt	– Rs. 30/-
24.	Hanjamana	– S.K. Sen	– Rs.100/-
25.	Introduction to Tantric Buddhism	– Dr. S.B. Dasgupta	– Rs. 16/-
26.	Indigenous States of Northern India	– Dr. Bela Lahiri	– Rs. 50/-
27.	Nyaya Theory of Knowledge	– Dr. S.C. Chatterjee	– Rs. 25/-
28.	Philosophy of Mahatma Gandhi	– Dhirendra Mohan Dutta	– Rs. 5/-

For other details please get in touch with

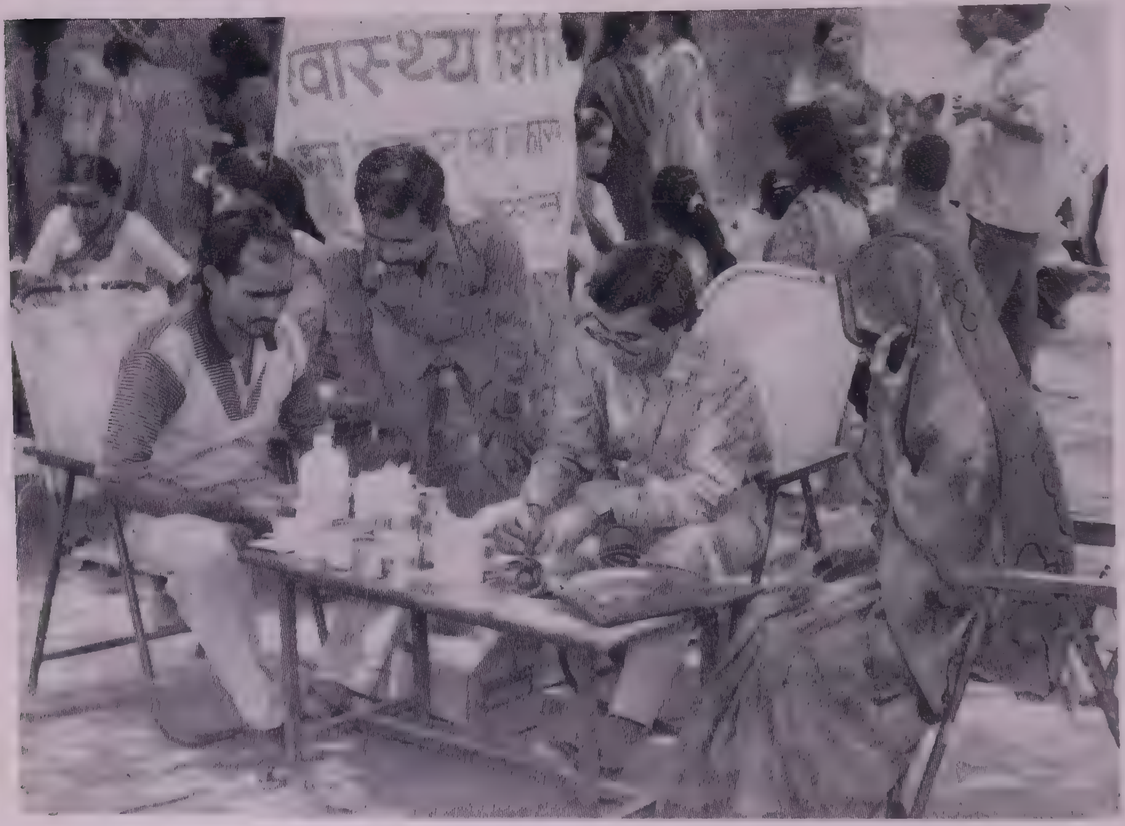
MANAGER, PUBLICATION DEPARTMENT
CALCUTTA UNIVERSITY
48, HAZRA ROAD, CALCUTTA - 19

UNIVERSITY NEWS, MONDAY, JUNE 22, 1992 Regd. No. R.N. 7180/63 Postal Regd. No. DL – 11106/92

North Bengal Varsity Convocation

25TH ANNUAL CONVOCATION
NORTH BENGAL UNIVERSITY

From L to R : Prof. Satyasadhan Chakraborty, Minister-in-Charge, Department of Higher Education, Govt. of West Bengal, who delivered the convocation address, Prof. Nurul Hasan, Governor & Chancellor and Prof. K.N. Chatterjee, Vice-Chancellor of the University.



Health Camp at Naya Gaon during Village Development Awareness Camp organised by the S.D. College, Muzaffarnagar.

Published by SUTINDER SINGH, on behalf of the Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi-2.
Grams: ASINDU. Phones: 3310059, 3312305, 3312429, 3313390, 3323097 and 3712435. Telex : 31-66180 AIU IN
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ISSN-0566-2257

University News

MONDAY, JUNE 29, 1992

Rs. 5.00

LIBRARY & DOCUMENTATION UNIT
24 JUL 19
C.F.T.R.I. MYSORE

Shri R. Venkataraman, President of India, awarding the Maulana Abul Kalam Azad Trophy to Prof. Upendra Baxi, Vice-Chancellor, University of Delhi. Others seen in the picture (from L to R) are Shri Arjun Singh, Union Minister for Human Resource Development, Dr. J. S. Naruka, Director, Physical Education and Prof. S. K. Wasan, Registrar of the university.

INDIAN COUNCIL OF SOCIAL SCIENCE RESEARCH

Applications are invited for the award of Doctoral Fellowships in Social Sciences for the year 1992-93 under the following schemes:

A. 1. **Centrally Administered Fellowships in the following areas :** (a) Women's Studies; (b) Medical Sociology/Medical Anthropology; (c) Fellowships for Physically Handicapped/Disabled Scholars.

2. **Open Fellowships** – These are open to scholars both in research institutes and universities preferably on subjects with interdisciplinary orientation.

3. **ICSSR Foundation Day Fellowship**

4. **Fellowships for students of the North-Eastern Region**

B. **INSTITUTIONAL DOCTORAL FELLOWSHIPS are tenable at :**

(1) Sardar Patel Institute of Economic and Social Research, Thaltej Road, Ahmedabad-380054. (2) G.B. Pant Social Science Institute, Yamuna Enclave, Sangam Vihar Jhusi, Allahabad-221506. (3) Institute of Public Enterprise, Osmania University Campus, Hyderabad-500007 (4) Institute of Economic Growth, University Enclave, Delhi-110007. (5) Giri Institute of Development Studies, Sector 'O' Aliganj Housing Scheme, Lucknow-226020. (6) Madras Institute of Development Studies, 79 Second Main Road, Gandhi Nagar, Adyar, Madras-600020. (7) A.N. Sinha Institute of Social Studies, Patna-800001. (8) Indian Institute of Education, 128/2 J. P. Naik Road, Kothrud, Pune-411029. (9) Centre for Social Studies, South Gujarat University Campus, Udhana Magdalla Road, Surat-395007. (10) Centre for Development Studies, Prasantnagar, Ulloor, Trivandrum-695011. (11) Centre for the Study of Developing Societies, 29 Rajpur Road, Delhi-110054. (12) Institute for Social and Economic Change, Nagarbhavi P.O., Bangalore-560072. (13) Centre for Economic and Social Studies, Nizamia Observaorty Campus, Begumpet, Hyderabad-500016. (14) Gandhian Institute of Studies, Rajghat, Varanasi-221001. (15) Centre for Studies in Social Sciences, 10 Lake Terrace, Calcutta-700029.

Necessary details and application forms are available from the Institutes.

ELIGIBILITY

1. Postgraduation in social sciences with at least 55 per cent marks.
2. Candidates must have cleared National Eligibility Test (NET) for Junior Research Fellowship in social sciences held by UGC/CSIR. Those who expect to pass in June 1992 examination may also apply.
3. Applicant must be registered for Ph.D. or should be able to complete the registration formalities within six months of joining the fellowship.
4. Selected scholars (for institutional fellowship) will have to be registered under the supervision of one of the faculty members of the respective institutes. Other things being equal preference will be given to scheduled caste/tribe candidates.

AGE

The upper age limit for JRF is 35 years as on 1.1.1993 (Relaxable by 5 years for SC/ST and women candidates). In exceptional cases where a candidate is found to have outstanding ability, the age limit may be relaxed marginally at the discretion of ICSSR.

LAST DATE

The last date for the receipt of completed application form is **30th July 1992.**

VALUE OF FELLOWSHIP

A. Selected candidates will be paid a fellowship amount of Rs. 1,800 per month for the first two years and subsequently Rs. 2,100 per month plus Rs. 5,000 per year as Contingency Grant. Fellowship will be available for a maximum period of 4 years.

B. Under the Salary Protected Scheme, employed scholars will get his/her salary for one year plus one time Contingency Grant @ of Rs.5,000 (The duration of this fellowship is likely to be extended to two years).

ADMISSION PROCEDURE

Selection will be based on the candidate's past academic record and performance in the interviews conducted by the ICSSR or by the Research Institute.

APPLICATION FORMS

Further details and application forms can be obtained personally or by sending self-addressed stamped envelope (Rs. 4/-) to the **Director (Fellowships), Indian Council of Social Science Research, 35 Ferozeshah Road, New Delhi-110001.**

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Editor :
SUTINDER SINGH

TEACHER EFFECTIVENESS

S. Santhana Krishnan*

Teaching is one the oldest professions. Teaching is an art, a science and skill (Pillai,1985). Teaching is an activity – a unique professional, rational and human activity. Teaching is an intricate, complex, conscious and deliberate activity. According to Braskamb Brandenburg and Ory (1984) good teaching means more than entertaining in front of the class. Effective teaching means teaching which produces maximum learning outcome. It aims to achieve the goals of education. Teaching is varied in style, tempo and strategies with an order of logical operations involved in it.

The problem of teacher effectiveness is complex that 'no one knows what the complex teacher is' (Biddle and Ellena, 1964). It is otherwise called "Effective teaching", "Criteria for competence" and "Ability to teach". An effective teacher may be understood as one who helps development of the basic skills, understanding proper work habits, desirable attitudes, value judgments and adequate personal adjustment of the students (Ryan, 1969). Teacher effectiveness concerns those outcomes that reflect the agency of the teacher and the objectives of education. It points to the effects of a teacher in a classroom situation. The teacher's ability or competence or effectiveness is comprised of one or more abilities of a teacher to produce agreed-upon educational effects in a situation or context.

In its broadest meaning, competence is an individual ability to produce agreed-upon results. According to Biddle and Ellena (1964) teacher effectiveness can be determined through the formative experiences, teacher properties, teacher behaviours immediate effects and long-term consequences. The effective teacher never stops experimenting to discover what best suits his own particular needs and those of his students. The effective teacher can apply teaching methods that are easier, quicker, better, safer, more rewarding, less labour intensive and more suitable.

The effective teachers can teach using different methods of teaching, using different media, using variety of audio-visual aids and applying unconventional techniques. The fulfilment of education's goal could be achieved only through quality education. Thus, the teacher and the quality of his teaching are of paramount importance.

No aspect of education has been discussed with greater frequency with as much deep concern, or more educators and citizens than that of teacher effectiveness – how to define it? how to identify it? how to measure it? how to evaluate it? and how to detect and remove obstacles to its achievement? But the earlier studies on the competence of teachers are inconclusive and piecemeal and little is presently known for certain about teacher excellence. It is not an exaggeration to say that we do not today know how to select, train for, encourage, or evaluate teacher effectiveness (Biddle and Ellena, 1964)

To attempt to determine the merit of any individual's teaching behaviour is thus to deal with a many-sided problem involving not only a large number of variables but also the question of what weight each variable is to be given in assessing the teacher effectiveness.

**V.O.C. College of Education, Tuticorin-628 008*

The Functions of a University

Biplab K. Mazumdar*

"A university like all other human institutions," wrote the shrewd American, Abraham Flexner, a quarter of a century ago, "is not outside but inside the general social fabric of a given era. It is an expression of the age, as well as influence operating upon both present and future."

The reminder is perhaps even more necessary today than when it was written. Never were there so many people wanting to reform the university as now, and it is by no means clear that all of them realize that, when all is said and done, what finally decides the shape and functions of a university is the pressure of social needs and desires.

The university rests on the assumption that there should be somewhere in the State, an organization the purpose of which is to think most profoundly about the most important intellectual issues. Its purpose is to illuminate the whole educational system and the speculative and practical issues that confront speculative thinkers and men of action. It is a community that thinks.

Every university should be a highly specialized institution whose business is to be a centre of independent thought concerned with clarification and reinterpretation of basic ideas. It is not allowed to be cluttered up with other jobs, because these would disrupt or at least confuse it. Would the University Grants Commission accept this one purpose as significant justification for according university rank to an institution.

The university is not the hired agent of a monied system. The function of the university is very high. It is almost holy. It ought to serve as a forum for the people, through which the people may know freely what is going on all over the world. The university is but the servant of human intellect and its ministry is for good or evil, according to the character of those who direct it. The university is a mill that grinds all that is put into its hopper. Fill the hopper with poisoned grain and it will grind it to meal, but there is death in the bread. Care should be taken that the art of imparting education to the students, aspiring for towering ambition, should be encouraged and that it should be easy and safe for any student to communicate his thoughts to the public for the service of our country.

Around the campuses of Indian universities, the stale, impudent insinuations of slander and sedition with which the gormandizers of power have endeavoured to discredit our universities are so much the power more to the sate government's honour; for the jaws of power are always opened to devour and their arms are always stretched out to destroy the freedom of thinking, speaking and writing.

If there is ever an amelioration of the condition of universities, philosophers, theologians, legislators, politicians and moralists will find that the regulations of the University Grants Commission is the most difficult, dangerous and important problem ; they have to resolve. Indian universities cannot be governed without it, nor at present with it.

To limit the power of University Grants Commission is to insult a nation. The organization of University Grants Commission has truly been a success. The Indian press is assiduously and almost exclusively busy with the task of lowering the cultural level of our university's students. The universities, which are mostly controlled by vested interests, have an excessive influence on public opinion. The University Grants Commission is our chief ideological weapon. Its duty is to strike down the enemies of society, the foes of the scientific education.

When knaves fall out, honest men get their goods; when evil doers dispute, we come at the truth. One good school master is of more use than a hundred priests. The greatness of university consists in saying what is true, and in acting according to the public opinion. A university is the measure of knowledge and the business of the understanding. A university is a mission, our ideal, our soul, and our banner which will lead us to victory. As an ambassador, a university should produce an honest man, sent to go abroad for the good of his country. All who have meditated on the art of governing students have been convinced that the fate of our Indian universities depends on the education of youth. Educated youth are as much superior to uneducated youth as the living are to the dead. A university makes a student easy to lead, but difficult to drive; easy to govern, but impossible to enslave. Since all have the same needs and the same faculties, let there be one university education for all, one food for all.

A university is not preparation for degree; it is life itself, a social process and a growth. In India, there is a

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clamouring for universal education which is the most corroding and disintegrating poison that liberalism has ever invented for its own destruction. Many people believe that the faith of university education rests on the proposition that man is a political animal, that participation in political decisions is necessary to his fulfilment and happiness, that all men can and must be sufficiently educated and informed to take part in making these decisions, that protection against arbitrary power, though indispensable, is sufficient to make either free individuals or a free society, that such a society must make positive provisions for its development into a community learning together. A university education is the education which gives a man a clear, conscious view of his own opinions and judgments, a truth in developing them, an eloquence in expressing them, and a force in urging them. A university teaches a student to see things as they are, to go right to the point, to disentangle a skein of thought, to detect what is sophistical, and to discard what is irrelevant....Religion, morality and knowledge being necessary to good university, and the happiness of mankind, schools, colleges and universities, and the means of education shall forever be encouraged.

In the 19th century the problem of education was that university was dead in the 20th century the problem is that the quality of student is dead. A university has now become a mere machine for producing graduates, engineers, doctors etc. As for the just and noble idea, the prosperity of a country depends, not on the abundance of its revenues, nor on the strength of its fortifications, nor on the beauty of its public buildings; but it consists in the number of its cultivated citizens, in its men of education, enlightenment and character. A university education is the leading of human souls to what is best, and makes what is best out of them; and these two objects are always attainable together, and by the same means. The training which makes men happiest in themselves also makes them most serviceable to others. University education does not mean teaching students what they do not know. It means teaching them to behave as they do not behave. It is not teaching the youth the shapes of letters and the tricks of numbers, and leaving them to turn their arithmetic to roguery and their literature to lust. It means, on the contrary, training them into perfect exercise and kingly continence of their bodies and souls. It is a painful, continual and difficult work to be done by kindness, by watching, by warning, by precept, and by praise, but above all—by example.

An ancient sentence about education says it is the education worthy of a free man, and the converse is equally ancient : the free man is the one who is worthy of an education. Both sentences remain true, the only difficulty being to know how many men are capable of freedom. The purpose of university's function is not happiness. It is not social integration or political system. Its purpose is at once the discipline of the mind for its own sake; these ends are to be achieved through the mastery of fundamental subjects which cluster around language and number, the two instruments by which man knows himself and understands this relation to the world.

Some of the universities in India have become absolutely barren, our social life has been completely paralyzed. These are some of the glaring consequences of the anti-social temper of some students and illogical political ideologies. The highest function of a university is to enrich human knowledge and endow human genius with the utmost creative potentiality while its noblest aim is to make man's social life better. Without these aims and objectives, no search for truth is possible; no discovery of truth is useful; progress is checked and India no longer marches forward toward the nobler life which the future holds for students. The abuse dies in a day, but the denial slays the life of the people and entombs the hope of the race.

The most capital advantage an enlightened university can enjoy is the liberty of discussing every subject which can fall within the compass of the human mind; while this remains, functions of the university will flourish. The mutual confidence between the university and students can be maintained only by an open mind and a brave reliance upon free discussions which is to a great people what winds are to oceans and malarial regions, which waft away the elements of disease and bring elements of health. The functions of a university stand indeed on holy ground when the universities approach the sublime company of those who, through the ages, have striven to secure, not only for themselves, but for all mankind, the right of unfettered utterance on every theme. If the universities are found worthy to trend in their footsteps and to bear the humble part in this great work, where education is concerned, it is the right, or rather duty, of the State to protect with its laws the prior rights....of families to the Indian education of their offspring. As a consequence, it is the duty of our country to respect the supernatural rights of the university students. The people must be taught to read. Perfect education of a university is affected only when the mind is permitted to form, to express, and to employ its own convictions of truth on all subjects, as it chooses. The essence of education lies not in the means, but in the ends. Violence has been for thousands of years a

(Contd. on page 11)

TWO GREAT VICE-CHANCELLORS

M. R. Rao*

> "In Andhra they had no predecessors, and it is doubtful if they will have successors, while in all India they have no equals in the particular types of eloquence of which they are the masters, apart from being specialists, each in his own line."
>
> —K. Iswar Dutt

The above statement refers to two eminent educationists of Andhra : Dr. C. R. Reddy and Dr. S. Radhakrishnan.

Dr.C. R. Reddy was appointed founder Vice-Chancellor of the Andhra University in April 1926; and he relinquished Vice-Chancellorship in August 1930 protesting against the Government's repressive policy. Dr. Radhakrishnan, then Professor of Philosophy at Calcutta University, succeeded Dr. Reddy in May 1931 and he relinquished the office to take up the post of Spalding Professor of Eastern Religions and Ethics at Oxford University in 1936. Dr. C. R. Reddy, the founder Vice-Chancellor succeeded Dr. S. Radhakrishnan and continued in the office for thirteen years until September, 1949. Dr. S.Radhakrishnan, after his return from Oxford, rejoined as Professor of Philosophy in Calcutta University in 1939 and simultaneously he was the "week-end" Vice-Chancellor of Benaras Hindu University from 1939 to 1941, and full time Vice-Chancellor from 1941 till December 1947.

Dr. C. R. Reddy was born on 10th December, 1880 in a village called Cattamanchi in Chittore District. Dr. S. Radhakrishnan was born on 5th September, 1888 eight years after C. R. Reddy, at the temple town of Tirutani. Both were students of Madras Christian College and C. R. Reddy took his B.A. with distinction in Philosophy and Economics in 1902. Dr. Radhakrishnan took his B.A. in 1906 and M.A. in Philosophy in 1909. Dr. Reddy took his M.A. Degree in History Tripos from Cambridge in 1906. After graduation he toured U.S.A. and returned to India in 1908. His first assignment at the Maharajah's College, Baroda, where he succeeded Aurobindo Ghosh as Vice-Principal, gave him the early training in educational administration. Afterwards he spent twelve years (1909-1921) in Mysore State in different capacities—first as Professor and then as Principal of Maharajah's College, and finally as Inspector-General of Education in the State in 1918.

Dr. Radhakrishnan spent seven years (1910-1917)in the teaching profession at Madras, (later had undergone Teacher Training) then joined as Assistant Professor of Philosophy in the Presidency College, and was confirmed as Professor in Summer 1917. He was transferred to Rajahmundry in the same year, but was unhappy since he was to be away from Madras. Dr. C. R. Reddy, who was Principal of the Maharajah's College, Mysore, helped him in securing the post of Additional Professor of Philosophy in July, 1918.

Both Dr. Reddy and Dr. Radhakrishnan migrated from Mysore to Madras and Calcutta, respectively, in the early twenties.

Dr. Radhakrishnan finally settled as a Professor of Philosophy in Calcutta University in March 1921. Dr. C. R. Reddy entered Politics in 1921 and was elected Member of the Madras Legislature Council (during the period 1922-26). The Madras Legislature enacted two Universities Acts — one was the Madras University Act, 1923 and the other, the Andhra University Act, 1926. He participated in the discussions of both the universities bills and fought for retaining the word "Andhra" signifying a race instead of the word "Telugu" which is only indicative of linguistic idealism. He favoured "Visakhapatnam", which is not a central place of Telugu-speaking districts against the wishes of Rayalaseem leaders. At the launching address of "S.S. JALAPRAKASH" (8th August, 1949), he said "I am not a native of Visakhapatnam, so I can safely declare it to be a City of Destiny or one of the cities of destiny in India". He was admired and respected not for his eloquence alone but for his qualities of head and heart. He had 'unself-conscious geniality' as described by Sir John Squire.

Dr. Radhakrishnan burst upon the English speaking people through his "Upton" lectures at Oxford in 1926. Veteran journalist M.C. observed "for a philosopher Dr. Radhakrishnan has been in many public places. Whenever he has spoken, he has set vibrations in the air. As I have often seen his mouth in articulation, it seems more an organ than a mouth, made for musical notes and not for a mere intake of calories or for speech, big or small." Dr. C. R. Reddy was proud that a Telugu personality attained the highest eminence on the intellectual map of the world. He invited Dr. Radhakrishnan to deliver the first convocation address of the Andhra University at Bezawada on 5th December 1927. Dr. Reddy was 47 and Dr. Radhakrishnan was 39. The same Convocation conferred Honorary Doctor of letters on another great son of Andhra, Sir Raghupati Venkata Ratnam Naidu, Vice-Chancellor of the Madras University. The Andhra University was the first University in the country to confer Hon. D.Litt. on S. Radhakrishnan in its second convocation in 1928. It was a pleasant coincidence that the University Office started functioning at Waltair on the birthday of Dr. Radhakrishnan, i.e., 5th September 1930.

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Dr. Reddy was a true Gandhian and as Inspector General of Education of Mysore State, he had thrown open all schools to Harijans. The famous Dandi March under the leadership of Gandhiji and the sacrifices and sufferings of the countrymen created agony in his heart. Dr. Reddy declared "I find the Vice-Chancellorship neither a pleasure nor honour in the midst of these agonies". After his resignation he said "I do not value good wishes. Good wishes without good deeds are good for nothing. The Congress got it. For my part, I could not remain Vice-Chancellor under those circumstances and I resigned in support of the Congress".

The generous-hearted Reddy invited Radhakrishnan to officiate as Vice-Chancellor in his absence, but he declined the offer on the ground that he wants a three-year term rather than a temporary arrangement. Dr. Reddy resigned in August 1930 and the Senate of the Andhra University elected Dr. Radhakrishnan against Sir Raghupati Venkata Ratnam Naidu by thirty three votes as against twenty eight. Dr. C.R. Reddy in the days of non-brahmin movement preferred Dr. Radhakrishnan rather than a Naidu. Radhakrishnan took charge on Ist May 1931.

Dr. Radhakrishnan started his work with determination to make the Andhra University a national university with international reputation. Through his wider contacts, he was able to secure the services of most eminent persons such as Humayun Kabir, Hiren Mukherjee, J.C. Coyajee, S.C. Chawla, Lundurg Wolf, T.R. Seshadri, Dr. V.K.R.V. Rao, etc. He made an attempt to appoint V.K.Krishna Menon (Politics), John Matthai (Economics) and even C.K. Naidu (Cricket Coach). Two colleges were established: College of Arts and the College of Science & Technology. He introduced job oriented courses such as Sugar Technology in 1933 and Pass and Honours courses in Commerce in 1934. The University College of Science and Technology was renamed as Jeypore Vikram Deo College of Science and Technology in 1934 in recognition of the generosity of Rajasaheb of Jeypore.

Dr. Radhakrishnan enhanced the image of the University by inviting Dr. Rabindranath Tagore, who delivered three extension lectures on "Man" on the 8th, 9th and 10th of December, 1933. He also invited Liberal Leader of the Day Sir C.Y. Chintamani, who gave two lectures on "Indian Politics since the Mutiny" in November 1935. Dr. Radhakrishnan in his concluding remarks however ridiculed liberals. It seems there was a disturbing exchange. Dr. Reddy and Dr. Radhakrishnan were highly critical about the role of liberals in the freedom struggle. Dr. Reddy remarked "All liberals are rats. They mistake patriotism for careerism" . Dr. Radhakrishnan laid down office of the Vice-Chancellor on 19th May 1936.

Dr. Reddy returned to the Campus considering it as home-coming and took charge as Vice-Chancellor on 20th May, 1936. Under his leadership the science departments attained full stature. He established the natural science departments (Botany, Zoology and Geology) and they were housed in the new building "Erskine College of Natural Sciences". The University College of Law was inaugurated at Masulipatnam on 4th August 1945. He introduced the postgraduate course in Applied Physics in 1939 and a separate department as such was formed in 1946. The Department of Sugar Technology was renamed Chemical Technology by introducing a new specialisation "Pharmaceuticals and Fine Chemicals" for the students of B.Sc. (Hons.) Technology in 1938. On the basis of the recommendations of Sir C.V. Raman Committee, the Andhra University introduced Meteorology and Oceanography in July, 1949. Dr. Reddy was a man of vision. He advocated the idea of close collaboration between the university and the industry at the time of launching of *Jalaprakash* in the following lines: "....there could be fruitful exchange of mutual services between the Airport, the Ship-building yard, the Engineering College and the Departments of Mathematics and Sciences and Applied Sciences of the Andhra University..... In a small way, because of lack of funds, we have organised courses in Meteorology, Atmospherics and Oceanography..... And what better place could there be than Visakhapatnam for the establishment of a Naval College?"

He bade goodbye to the Andhra University and joined as Pro-Chancellor of Mysore University in Sept., 1949. On December 10th, 1949, he delivered the convocation address at the Andhra University. Until that time, he delivered a customary Vice-Chancellor's address for over sixteen years. In the convocation address, he struck a serious note and stressed the necessity of attainment and maintenance of international standards. "The test of progress in England is : Are we at least equal to the next most powerful nation in this respect, say, France, or Germany or Japan." In India the test has been, "Are we better this year than we were last year, and by what percentage?" International standards were not applied, because we were not a nation yet. We were but compared with our yesterday. Our fitness for today's or tomorrow's international competition never came into the picture."

He was not honoured for what he deserved at the national level, still he was not disheartened. When his friend Shri K. Iswar Dutt regretted the injustice done to him (Dr. C. R. Reddy), he replied prophetically "Gratitude is a backward looking virtue—a self-contradiction and does not harmonise with forward looking progress". He died at Madras on 24th February, 1951. Dr. Reddy was an institution than a mere mortal.

Dr. Radhakrishnan's carrier proved more rewarding than that of Dr. Reddy. He later occupied more and more high and responsible positions as Ambassador of India to Russia and as Vice-President and President of the Republic of India. He too died at Madras on 17th April, 1975.

Educational Management Through DBMS

B. K. Passi*
D. R. Goel*

Introduction

A database is an integrated collection of related data to be shared by different users. A Data Base Management System (DBMS) creates and manages a database. There are various Data Base Management Systems available, viz., DBASE-III +, Clipper DBASE, FOXBASE FOXPRO, ORACLE, UNIFY. In countries, such as USA, Canada and Japan Data Base Management Systems are used in varied ways. Educational Resources Information Centres (ERICs) are quite common. The learning resources in different areas and forms are stored on Compact Disk Read Only Memory (CDROM) which are accessible to multi-users simultaneously on-line on different terminals through computer networks. The databases for various purposes are stored on CDROM which is a very compact storage device, e.g., the entire Encyclopaedia Britannica is located on a single CDROM. Data Base Management Systems are used in developed countries for Educational office automation, Management of Libraries and Laboratories, Time-Space Personnel Management of Libraries and Laboratories, Time-Space-Personnel Management, Admissions, Teaching, Learning, Evaluation, Guidance and Counselling, and Research etc. In India also different DBMSs are being used for various purposes, but, still it is in the infancy stage. Some of the libraries in India are managed through computers. An INFLIBNET (Information Library Network) project is going on to interconnect different libraries in India through Satellite Network. There is an EDUNET (Educational Network) in the country connecting different IITs with the Tata Institute of Social Sciences, Bombay. Attempts have been made at Madras to put some Medical Information on CDROM. Databases have already been created on First, Second, and Third Surveys of Research in Education (Buch, M.B.) and the fourth being appended covering Educational Research in India upto 1988. The focus of the present paper is Educational Management at the School of Education, Devi Ahilya Vishwavidyalaya (DAVV), Indore, through Data Base Management Systems.

Educational Management through DBMS at the School of Education, DAVV, Indore

Office Automation

Some of the routine jobs of the office such as, correspondence, Accounts and Payroll are processed through computers. Need based software packages on Payroll (Seth,1991) and Accounts (Aswani &Sohni, 1992) have been developed indigenously.

Screening the Applications of Candidates for Different Courses

A database (APP.DBF) was created having required fields, such as, Name, Address, Academic Qualification with percentage of marks, experience etc. Also, a program (SCR.PRG) was developed to screen the applications of the Diploma in Computer Education candidates on the basis of present criteria such as, first or second class graduate/ postgraduate or appeared in the final year of graduation or postgraduation. During 1989, 126 candidates out of 135 were found eligible for the entrance test (Mahajan, 1989).

Development of Computer Software for Testing

A database TEST.DBF is created having various fields, such as, Statement, ALT1(Alternative1), Alt2,ALT3, ALT4, SR(Selected Response), CR (Correct Response), Score, Cumulative Score. The number of items in the database question bank is about 60 times the number of items to be selected for the test. The items for the test are selected with the help of a random number generator. The item numbers are then stored in ascending order in another database. The items from the question bank are picked up one by one and displayed on the VDU. The response given by the candidate is compared with the correct response and the score is recorded, and displayed too, itemwise and cumulative. Also, there is a check on the time elapsed. The computer based test is fully automated. Computer based tests have been developed at the School of Education for various purposes as follows :

(i) Computer Based Test for selection of candidates for Computer Education through a question bank on logical reasoning, arithmetic ability, general awareness, language ability, and data interpretation ability, e.g., every year students for B.Ed. Computer Education – an optional paper, and Diploma in

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School of Education, Devi Ahilya Vishwavidyalaya, Indore-452001

Computer Education—a one year course are selected through the question bank software. During 1992 the number of candidates for B.Ed. Computer Education was 82, whereas, seats available were 30. All these candidates were divided into 9 batches. Each batch appeared for the computer based test at the scheduled time. Thus, top 30 candidates were selected (Mahajan,1992).

(ii) Computer based tests for selection of teacher trainees through a question bank on Teaching Aptitude, Social Sensitivity, Reasoning, and Language competency are being developed (Mishra, 1990)

(iii) Computer based unit tests and comprehension tests on various subjects, such as, Educational Technology, Microbes, Semiconductors, Fundamentals of Computers, BASIC, dBASE-III+, System Analysis and Design, PASCAL, LOTUS-1-2-3, WORD PROCESSOR. Educational Technology Unit Tests and Comprehension Tests are given to the M.Ed. students on computers. Similarly, the D.C.Ed. students take the tests on computers. The scores obtained on these tests add to the overall evaluation.

Computer Based Evaluation Data Processing

There is semester system in the Devi Ahilya Vishwavidyalaya, Indore. The evaluation is totally internal. The evaluation data are processed through the Data Base Management System. The operators enter the raw scores. The grades, SGPA, CGPA, GGPA, Percentage Score, and Division are computed through the software developed through Clipper dBASE. Marksheets are printed automatically. We have fully converted from manual evaluation data processing to computer based evaluation data processing. It is evident that computer based evaluation data processing is more accurate, reliable, efficient and timely.

Computer Based Profiles

Databases are created having profiles of staff and students on various attributes, namely, Code, Name, DOB (Date of Birth), BDGR (Blood Group), PA (Permanent Address), LA (Local Address), PHON (Phone), Hobby, SSPL (Subject Specialization) etc., in order to have access to the desired data of any body at any time required.

Computer Based Time - Space - Personnel Management System

An attempt is being made at the School of Education, DAVV, Indore, to develop Computer Based Time - Space - Personnel Management System. Computers can be very intensively applied for developing Time - Space - Personnel Management System. Once the database is created it can be used for various queries with respect to Time - Space - Personal Management. Biswal (1992) is developing computer software for Time-Space-Personnel Management in the Educational Institutions. It would facilitate Time-Space- Personnel Management in many ways. Weekwise T-S-P table, Daywise T-S-P table, Teacherwise T-S table, and responses to many varied queries, such as, spatial location of a person temporally, personnelwise status of space temporally, distribution of the periods of a person temporally, per person distribution of periods, range, and period density can be instantaneously generated.

Computer Based Learning Resources Management System

The School of Education, DAVV, Indore, library is managed through Learning Resources Management System (LRMS, Beryah, 1991) — a computer software developed at the School of Education, Indore. The software has been developed through CLIPPER dBASE. A database has been created having about 13000 books in the library. The software functions to Append, Search, Issue, Return, Book order, and Purchase etc.

Computer Based Laboratory Management System

An attempt is being made to manage the different laboratories, such as, Science, Educational Technology, Guidance and Counselling, etc. through computers.

Some of the tests for Guidance and Counselling, namely, reasoning, teaching aptitude, social sensitivity, and language ability, etc. have already been computerized. The School of Education, DAVV, Indore, has a separate clinic for Guidance and Counselling open to the public on nominal fees where a variety of cases are treated by the experts by testing through computer software.

Synthesising Research Findings

The research findings lying scattered and unnoticed are not of much use unless they are synthesised. Learning of different methods of synthesising research findings can equip the learners to cut across a large number of research findings to generate a comprehensive picture. Once the conclusive findings are arrived at, their implications can be worked out for different persons, such as, researchers, administrators, curriculum designers, and teachers, etc. There can be various approaches to research synthesis, namely, narrative, vote counting, combined significance, and meta-analysis or effect magnitude. Research findings in the areas of Creativity and Educational Technology have been synthesised at Indore through Data Base Management System, namely, dBASE III+ and their implications worked out.

DBMS as a course at various levels

The School of Education, DAVV, Indore, is offering Computer Education as a special paper at B.Ed. and M.Ed. levels. Also, it offers a one year, that is, two semester program of Diploma in Computer Education. Educational Management through Data Base Management System is offered at various levels. In addition to the regular courses there are short term courses offered by the School of Education on Data Base Management System open to the graduates from any discipline.

Computer Networking through Zenix Based Foxbase

Attempts are being made at the School of Education, DAVV, Indore, to convert the Computer based Library Management System from CLIPPER dBASE to Zenix based Foxbase so as to make it multiuser. Also, the databases are being developed on various programs of the School of Education, namely, the University Innovative School, Nursery Teacher Training, B.Ed., D.C.Ed., M.Ed., M.Phil. in Education, B.Ed. (Summer), M.Phil. (Future Studies), Ph.D., and Short Term Courses. The various fields in the databases are on admission criteria to different courses, duration and contents, Faculty associated with the different programs, etc. Progressively as the complexity increases, it would be a must to have computer networking, so that, different functionaries and users have optimal communication and access to the centrally located databases.

DBMS Related Expected Roles of Educational Agencies

Some of the expected roles of agencies, such as, the UGC, NCERT, ICSSR, ICMR related to Data Base Management Systems can be as follows :

Creation and Management of National Data Bases

The different agencies can facilitate database creation and management at the national level. For example, the NCERT has conducted different All India Educational Surveys which are available in the print form. The corresponding databases could be created. Attempts can be made to synthesize researches disciplinewise at the national level.

Networking different Educational Institutions with Educational Resources Information Centre

Different educational institutions in India may be linked with ERIC, so as to have an easy, on line, timely access to the data stored.

Training Programs on DBMSs

Training programs on different Data Base Management Systems may be conducted by different agencies to train personnel from schools, colleges, universities, and other institutions, so that, they feel competent to create and utilise databases for various purposes.

Orientation on DBMS User Friendly Packages

There are a large number of database management system user friendly packages, such as, Library Management System, Accountancy packages, Payroll system, Personnel Profile System, are readily available in the market. Such packages should be introduced to the educational institutions.

Allocation of Funds for Purchasing Computers and Software

Funds may by allocated to selected institutions so as to equip them with computers and software which can be utilised for various computer applications.

Induction of DBMS Courses at various Levels

Courses on DBMSs, viz., DBASE III +, CLIPPER - DBASE, FOXBASE, FOXPRO, UNIFY, ORACLE and other RDBMS (Relational Data Base Management System) may be inducted in the curricula at suitable levels.

Computer Based Evaluation through DBMS

Some of the institutions have prepared question bank software through DBMS, such as, CLIPPER Dbase. This should be made available to the other institutions. Also, some authorware is available which can be procured and utilised by the different institutions for testing. Agencies, such as, UPSC, PSC, NIBM, CSI, which conduct tests at the national level can also utilise the question bank software.

It is evident through the above presentation that DBMSs can be utilised for various purposes. Attempts should be made at all levels to use them optimally, so as to facilitate educational system.

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CALENDAR OF EVENTS

Proposed Date of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/ Officer to be Contacted
July 28-30, 1992	Fourth International Conference on Assessing Quality in Higher Education	To promote awareness of current issues and perspectives on the assessment of quality in higher education	University of Twente Enschede, The Netherlands	Mr. Trudy W. Banta Director, Center for Assessment Research and Development, The University of Tennessee, 1819 Andy Hold Avenue, Knoxville, Tennessee 37996-4350
August 11-16, 1992	8th World Congress for Rural Sociology	Theme : Rural Society in the Changing World Order	International Rural Sociology Association, USA	The Pennsylvania State University, 306, Agricultural Administration Building, University Park, Pennsylvania - 16802
August 16-19, 1992	55th Annual Meeting of the Rural Sociological Society	Theme : Rurality and the Global Environment	Rural Sociological Society, USA	-do-
August 25-28, 1992	Second Afro-Asian Psychological Congress	Theme : Psychology for Social Development and Human Welfare	The Chinese Psychological Society	Prof. Wang Su, Congress Secretariat, Department of Psychology, Peking University, Beijing-100871
August 26-28, 1992	Second International ISKO Conference on Cognitive Paradigms in Knowledge Organisation	To provide a forum for scholars working in the field of knowledge organisation	Madras Library Association in collaboration with Sarada Ranganathan Endowment for Library Science and University of Madras	Mr. S. N. Kumar Conference Secretariat, 5, Sivaganga Road, Madras-600 034
September 21-23, 1992	Sixth Annual Conference of the Asian Association of Open Universities	Theme : The Role of Open Universities in promoting Education for All	Korean Society for the Study of Distance Education	Dr. In Sung Jung, Secretariat, AAOU 1992 Annual Conference C/O Korea Air and Correspondence University 169, Dongsung-Dong, Chongro-Ku, Seoul 110-791, Korea

Personal Cost of Engineering (First Degree) Education

R. Srinivasan*

Components of Cost of Education

There are three important components of the total/unit cost of education – personal cost, public or institutional cost and opportunity cost or earnings foregone. Those who want to receive the benefits of collegiate education have to pay for the tuition and other expenses. The first components viz., personal or student cost comprises expenses on tuition fees, special fees, examination fees, games fees, library fees, laboratory fees and other expenses incurred on purchase of books, notebooks, stationery and commuting to the college. To these expenses we must also add the cost of private tuition engaged, if any, outside the college hours and the boarding expenses of those who stay in hostels attached to colleges. As for the institutional or public cost is concerned the items include teachers' and non-teaching staff salary, contigencies, cost of buildings, library books, laboratory equipment and consumables, postage, examination expenses and other sundry items. The lst one – opportunity cost refers to loss sustained by students consequent on their stay in colleges i.e., the income which they would have earned otherwise had they not joined the colleges. But the inclusion of this concept has a doubtful connotation as they might have remained unemployed in view of the severity of the unemployment situation prevailing in our society. Excluding of course this element it is possible to arrive at a realistic esteem of the total cost of education of a single student for a particular year taking into account only the private and public expenditures met by students and the institutions/management. Accordingly in this paper an attempt has been made to estimate the total money spent by students and their parents only to get an estimate of the same for the first degree course in engineering.

Now that self-financing institutions also have come to stay besides the government and aided institutions, the study has a valid reason to go into this estimate. As everyone knows, the non-grant institutions charge exorbitantly and naturally this pushes the total cost of education. Added to this they also take capitation fees which must also be taken note of. Excluding the capitation fees paid by the students, this study worked out the total cost in case of all the three types of institutions – government, aided and self-financing institutions.

Objectives

The main objectives of this study were :

1. to estimate the private cost of engineering education for the three types of institutions; and
2. to find out the significant differences, if any, in the estimates among the institutions.

Methodology

A questionnaire to elicit the data was circulated to a total of 321 students from three institutions—-one government, one aided, and one self-financing engineering college respectively in the State of Tamilnadu. The break up was – 88, 120 and 113 students respectively from government , aided and self-financing colleges. The filled-in questionnaires were analysed and the findings are reported below.

Findings of the Study

The main findings are as follows:

1. The average personal cost of first degree education in engineering computed on the basis of information received from the students works out to Rs.2,418.85 in government colleges; Rs. 3,072.15 in aided institutions, and Rs. 6,414.10 in self-financing colleges per year.
2. If we take note of the hostel expenses per month it was found that the boarding expenses worked out to be Rs. 389.20; Rs. 390.90 and Rs. 402.25 in these three types of institutions respectively. Only those students who stayed in hostels filled the relevant item in the questionnaire and the estimates cover the average mess expenses excluding of course the caution deposit and room rent to be met by them in addition to the monthly boarding charges. A glance at these figures indicate that there are not substantial differences in the hostel expenses met by them.
3. The glaring differences in the total fees and other expenses incurred by them indicate that self-financing colleges are highly expensive. The financial constraints of these institutions perhaps make them charge heavily and added to this they are relatively new or fresh institutions established a few years ago and as such are forced to incur heavy expenses in constructing necessary buildings equipping the laboratories etc. All these invariably tend to push up the cost in the initial years.
4. While the differences in the average annual cost are not significantly different between government and aided institutions, the same between self-financing

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and the other two types of institutions show a significant difference. Statistically speaking the differences are found to be significant at 1% level in both the cases.

5. The fact that non-grant institutions are deprived of any financial assistance from government or other agencies causes also considerable financial burden to the students who could not get the privilege of getting admission in other colleges. But it is desirable to have uniform norms in levying fees so that the students may not experience much hardships once they have to choose such self-financing colleges. It is desirable to have an upper limit for charging fees so that all such students will have a sigh of relief at least to some extent. It is time the government takes up this point and rationalizes the fee structure to help all students uniformly. Also it is equally important on the part of institutions to see that they are fully equipped to be of greatest help to the student community.

Conclusion

Though this study fails to indicate the average student expenditure as equally applicable at all places, yet it gives a realistic estimate as seen in the case of those institutions atleast from which data were gathered. More students are needed on similar lines to corroborate these findings and to have an accurate estimate of the cost of engineering education across the country. Such cross-sectional studies will help policy makers to consider other relevant issues also while fixing estimates for various types of expenditures incurred in academic institutions.

The Functions of a University

(Contd. from page 3)

reactionary factor. The deadliest enemies of our universities are not the foreign foes; they always dwell within their own borders. We think the enemy is here before us......We think the enemy is simple selfishness and compulsive greed....We think the enemies of the university education are old as Time, and evil as Hell, and that he has been here with us from the beginning. Every man who comes to education is entitled to the protection of Indian law, whatever oppression he may therefore have suffered, and whatever may be the colour of his skin.

For the edification of university education, all students have an equal right to the free development of their faculties; they have an equal right to the impartial protection of our country and our universities; but it is true to enjoy an equal amount of goods. Children are principally the creatures of example—whatever surroundings adults do, they will do. If they see us attempting to govern each other they will imitate the same barbarism. If we habitually admit the right of sovereignty in each other and in them, they will become equally respectful of our rights and of each other's. All these propositions are probably self-evident, yet not one of them is practicable under the present mixture of the interests and responsibilities between adults and between parents and children. To solve the problem of education, children must be surrounded with equity and must be equitably treated and each and everyone, parents or child, must be understood to be an individual, and must have his or her individual rights equitably respected. Every university has a great power to think and to express thought that is a power to do so that there would be a more balanced, a more equal even, and equitable system of human education around the university campus.

The united voice of all universities cannot lend the smallest foundation to falsehood. It is a melancholy truth, that a suppression of education could not more completely deprive the nation of its benefits, than is done by its abandoned prostitution of education. A university is the instinct of all great souls.

University education is always the strongest argument. Its ethical truth is as exact and peremptory as physical truth. The most striking contradiction of the functions of our universities is the fundamental reverence for its truth and ennobling qualities for moral catharsis which we profess and the thorough-going disregard for it which we practice. There are students who perish when their eyes are opened. A university gains more even by errors of one who, with due study and preparation, thinks for hinself than by the perfect opinions of those who only hold them because they do not suffer themselves to think. All functions, in true sense of the term, of a university are to be saved, and nothing else is unsaved; and a student who keeps back its truth or withholds the crystal depth of its quality from other students, from motives of experience, is either a coward or a criminal or both.

In India, where the students are really free and through their great unions, indominated by any outside force or any dictator within, can take their proper place in the society; and where the dignity and security of the students should be guaranteed by their strength and fortified by the safe-guards of law. Preparation for education is a constant stimulus to the progress of a university. A university is to student what maternity is to a woman.

Conservation Society

"The magnitude of the educational task before us is clear. We must work for the growth of a Conservation Society where the best in modern agricultural, industrial information and management technologies are integrated in an ecologically desirable manner with traditional wisdom and technologies. We should work for a society where both unsustainable life styles and unacceptable poverty become anachronisms of the past. This will come about only if the vertical and horizontal dimensions of human understanding and perceptions are integrated", said Prof. M. S. Swaminathan, Chairman, Centre for Research on Sustainable Agricultural and Rural Development, Madras. He was delivering the convocation address at the 5th convocation of Sri Padmavathi Mahila Visvavidyalayam, Tirupati. Excerpts...

Among planners and administrators there is often a debate whether in issues relating to women and development a seperate approach should be used or whether the concern for women should be integrated into all spheres of activity in the form of a total household approach. Unfortunately, experience shows that a fair percentage of men in most cultures, left to themselves, will not put women forward to receive training, and women themselves will not push to be included. Therefore, I believe that the separate approach will be needed for yet another two or three generations. Otherwise, if programmes are structured around the involvement of both men and women, assuming some vague sharing of knowledge and technologies, women will continue to be left out. This is why I salute all those who conceived the idea of this Mahila Visvavidyalayam and who have dedicated themselves to the cause of rooting this University in a culture of relevance and excellence in its educational and research programmes. We have so far only five Women's Universities in the country and we need urgently more such institutions.

Mr. Robert McNamara, when he was President of the World Bank, was asked in 1978 what single intervention he would make to advance development if he was restricted to only one action worldwide. His response was, "Dollar for dollar, the best intervention would be to put every girl in the world into school. This would immediately change population, family incomes, energy consumption, health, hygiene — everything". Mahatma Gandhi had expressed a similar view over-60 years ago and the human development indicators in Kerala serve as evidence of the wisdom of this approach.

Yet we find not only widespread illiteracy among women in our country, but also inexcusable discrimination of various kinds, reflected by adverse sex ratios (the 1991 census revealed that there are only 92.9 females for every 100 males, down from 93.4 in the 1981 census and 93.00 in the 1971 census). Ms. Sharon Capeling-Alakijaa, director of the United Nations Development Fund for Women, said recently, "Millions of women have died because they are women. In most societies, women are the bearers of tradition, and if decisions are made between boy children and girl children, women were involved in making decisions". This is why I feel that Universities like this one should become agents of change in our society and help to foster love and respect for all members of humankind regardless of sex, religion, race or language.

I am happy that a National Commission for Women has at long last come into existence. The Committee on the Status of Women in its report submitted in 1976 recommended the establishment of an autonomous Commission with a mandate "to review, evaluate and recommend measures and priorities to ensure equality between men and women and full integration of women in all sections of national life". The National Commission for Women Act enacted by Parliament in 1990 has assigned several important tasks to this Commission, including a careful study of all matters relating to the safeguards provided for women in our Constitution. Obviously, Universities like yours will have to provide the necessary intellectual and analytical support to the Commission in its work.

There is no dearth of suggestions or ideas on what needs to be done. Both "Shramshakti", the report of the National Commission on Self-employed Women and Women in the informal sector and the National Perspective Plan for Women (1988-2000) prepared by a core group set up by the Ministry of Human Resource Development of the Government of India have given valuable suggestions. At the international level, UNICEF has given high priority to the education of girls and women in its "Girl Child" programme for 1992. There is wide spread agreement on the high multiplier effect of female education on critical issues such as population stabilisation and quality of life improvement. As I mentioned earlier, the experience of Kerala in social development is a striking example of the critical importance of female literacy and the economic status of women with reference to human development indicators.

You are fortunate to have had your education in a city which draws millions of our countrymen from all over the world to worship and achieve inner peace. Within the temple we experience the wisdom expressed beautifully in the Upanishads that there is only one human continuum and that is an extended family, *Vasudaiva Kutumbakam*. The Upanishads teach us that every child that is born into the world is descended directly from that single primal light. We are, therefore, *Amrutasya Putra*, the proud children of Immortality. There is dignity and divinity inherent in each human being – by virtue of simply *being*, rather than *becoming*. Modern molecular genetics reinforces the concept of unity of all living beings and provides the concept of unity of all living beings and provides insights into the factors determining diversity. The chemical substance of heredity, Deoxyribose nucleic acid (DNA for short) is the same in the living world, except in a few viruses.

It is against the background of such an understanding of the mechanisms determining unity and diversity among living forms, that it is difficult to understand when and how irrational prejudices and gender discrimination started to grow in our country. Whatever the causes, we who have had the privilege of higher education have a duty to fight and overcome them.

Where vision is limited, action tends to get equally circumscribed. Hence, I would like to place before you what I feel should be a minimum agenda which the nearly 200 Universities and institutions of learning in our country should jointly strive to achieve during the rest of this century.

1. Achieve literacy and numeracy for every girl and boy by the year 2000;
2. Document positive developmental results from the education of girls and spread awareness about them;
3. Develop *techniracy courses* (i.e.imparting new technical skills through learning by doing) which can help to enhance economic opportunities for women, particularly with reference to value-added jobs. Training programmes for rural women often tend to be in areas such as sewing, cooking and crafts and fail to take into account women's roles as farmers and managers of natural resources; and
4. Compile an inventory of opportunities opened up by new technologies for women belonging to families with land and those without land or without productive assets. The total number of landless households was 15 million in 1961, rising to 26 million in 1981, and is projected to reach 44 million by the year 2000. For off-farm employment and underemployed, non-agricultural sectors would have to grow at more than 12 percent a year, which is over twice the rate we have witnessed so far. Thus, there is a fast-growing pool of rural women and men without land or adequately remunerative work and there is need to address separately their technological and training needs.

We must scan the scientific work in progress in our country and elsewhere with regard to technologies available for women and particularly for those seeking wage employment. It would be useful if scientists could indicate whether the technologies developed by them for reducing drudgery and increasing the energy input-output efficiency ratio could lead to a diversification of labour use and income or only to the displacement of women wage labourers from their traditional occupations. Since women will benefit greatly if there is flexibility in the timing, duration and place of work, there is particular need for examining what efforts, if any, have been made by scientific institutions to introduce flexibility in time and place in jobs for women.

I have indicated a few areas of action and analysis where our Universities, particularly women's, rural and agricultural universities can perform a valuable role. It is said "knowledge leads to unity; ignorance to diversity". This is why there is need for more efforts in sensitizing the community as a whole on the need for understanding the implications of the data relating to adverse sex ratio and higher female infant mortality and illiteracy, with reference to the ethos and mind-set of a society.

I am glad this University has courses in areas of vital importance to the development of human values as well as economic activities. Those who have undergone training in computer applications, microbiology, home science, sericulture, nutrition, dietetics, communication and journalism can play a useful role in implementing the agenda for equity in gender terms which I have just outlined. You can help to make programmes such as Training Rural Youth for Self-Employment (TRYSEM) more relevant to rural women. Exciting opportunities exist for deriving professional and emotional satisfaction from the education you have received at this University. I can only hope that you will experience the thrill and joy arising from helping those who have not had the privilege of receiving

University education.

1992 is widely described as the year of the environment, since in June this year there will be an Earth Summit, which is the popular name for the United Nations Conference in Environment and Development, at Rio de Janeiro in Brazil. 1992 also marks the 40th anniversary of the Community Development Programme in our country, a programme in which the idea on what to do and the initative for doing was to come from the village community, the government providing technical and financial assistance where needed. I am mentioning these two events—one relating to a village level programme and the other relating to a charter for the Earth, only to stress that at both ends of the spectrum something has gone wrong.

The harmony within nature we are seeking today was central to the ethos of the pre-industrial age. To those we describe as tribals, forests were not just carbon sinks but were the very foundations of life. The tribal charter for the Earth was born from the world of day to day life and not from the world of words we generally witness in Seminars and Symposia, both national and international. This is why it has such deep spiritual impact, in contrast to the conventions and protocols we now draw up where excellence in drafting is often measured by the ability to substitute platitudes for precision in commitments.

The magnitude of the educational task before us is clear. We must work for the growth of a Conservation Society where the best in modern agricultural, industrial, information and management technologies are integrated in an ecologically desirable manner with traditional wisdom and technologies. We should work for a society where both unsustainable life styles and unacceptable poverty become anachronisms of the past. This will come about only if the vertical and horizontal dimensions of human understanding and perceptions are integrated. Therefore, I would like to conclude by requesting you to ponder over the implications of the following verse of T. S. Eliot :

> *"Where is the wisdom that we*
> *have lost in knowledge?*
>
> *Where is the knowledge that*
> *we have lost in information?*
>
> *The cycles of heaven in*
> *twenty centuries*
>
> *Bring us farther from God*
> *and nearer to dust".*

COUNCIL OF
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RESEARCH

(HUMAN RESOURCE DEVELOPMENT GROUP)

Advertisement No. SRF/RA-EMR-I/92 (2nd)

This is to bring to the attention of all concerned that CSIR has invited applications for awarding **Senior Research Fellowships and Research Associateships vide an advertisement appearing in 4th July, 1992 issue of Employment News.** Eligibility conditions and application proforma are published alongwith the advertisement. The application form may be cut out or copied from advertisement and used. Indians presently abroad can also apply.

The last date of receiving applications is **17th August, 1992.** The application duly completed in all respects should be sent to the **Under Secretary, Extramural Research Division, Human Resource Development Group, CSIR Complex, Dr. K.S. Krishnan Marg, Pusa, N.P.L. Campus, New Delhi-110012.**

In Defence of Distance Education

"Distance education has emerged as a major force because of the inadequacies of conventional system to meet the new challenges and new demands of the society on education", said Professor V.C. Kulandai Swamy, Vice-Chancellor of Indira Gandhi National Open University, in New Delhi recently. He was speaking in defence of distance education which came under attack from various sections of the academic community.

He said the distance education system was not a supplement or a complement to the conventional system, nor a competitor, but had objectives and target groups that were different from those of the conventional system. The distance education system, Professor Kulandai Swamy said, was the third stage in the evolution of education, incorporating the elements of the Gurukul and the classroom systems.

The high productivity and greater flexibility of the distance education system enabled it to meet the demands of universalization of education, equity and opportunity in education and continuing education.

The conventional system could not achieve this because even increasing opportunities in terms of educational institutions did not ensure accessibility. This is where the system of distance education could fulfil the need, by transporting knowledge to people, where people could not be transported to the places of knowledge.

The conventional system catered only to 6% of the age group 18-21 years. It was the remaining 94% that the systems of distance education could cater to. The need for updating knowledge could also be met by the system of distance education which would enable an employed person to learn while working, making him more efficient, and giving him opportunities for career advancement.

The Indira Gandhi National Open University, the Vice-Chancellor stated, had been set up with the twin objective of functioning as an Open University and as an apex body in the field of distance education. As an apex body it would fulfil the same functions as the University Grants Commission in relation to the universities and colleges. IGNOU would fund all the open universities. Further, projects under the conventional system relating to distance education, including correspondence courses, would be started only with the approval of the distance education council of IGNOU. The UGC which would fund these courses would have to consult the IGNOU before granting permission for the starting of any distance education course.

IGNOU had made great strides in the six years since its inception, he said. A major contribution had been in the field of production of textbooks at affordable prices. The text-books produced by IGNOU were now being demanded by other universities following the conventional systems as well. The university, Professor Kulandai Swamy said, had adopted innovative methods, and implemented the UGC recommendations regarding the curriculum pattern. It had also adopted recommendations regarding the examination pattern, and implemented the pattern of continuous internal evaluation.

The standard of education of the university, the Vice-Chancellor stated, was quite high and the UGC had issued a letter to all the employers and universities informing them that the degrees and diplomas awarded by IGNOU were to be treated at par with those of the conventional universities.

The distance education system also promoted mobility within the system of higher education. At present there was no mobility possible for students within different universities. IGNOU had made pioneering effort in this field by entering into a memorandum of understanding with the University of Pondicherry whereby the credits earned by a student of one university would be recognised by another.

Dwelling on the potential of the distance education system, Prof. Kulandai Swamy said the next decade would see the emergence of "multinational universities"—universities of one country will offer courses in other countries via distance education.

"The trend is towards globalisation of education", he declared. He said negotiations were on between the governments of Mauritius and India to arrange cooperation on distance education programmes, and there were proposals from Africa and the West Asia on the same.

The Vice-Chancellor stated that the expenditure of distance education was one-third of the conventional system. He clarified that the planned expenditure of IGNOU had remained frozen at the 1991-92 levels as with the conventional universities, but non- plan expenditure had increased since the university was still in the process of development.

He refuted the argument that the Government was abdicating its responsibility with regard to the conventional system of higher education by promoting distance education as an alternative. The component of conventional courses, like B.A., B.Com, etc., was very small and it was vocational and continuing education which was the major target of distance education, he stated.

President for 2-Year Stress on Education

The President, Mr. R. Venkataraman, called for concentrating on the education and literacy programmes for two years to the exclusion of everything else. Inaugurating the time-bound total literacy campaign of the Himachal Government, he stressed upon the importance of education for the country and said that a two-year suspension of other schemes would not be damaging as such delays were normal.

He observed that though freedom of education was enshrined in the Constitution, it was not promoted in a concerted effort after Independence. "If the 6-13 age-group had been taken up immediately after the country's Independence and educated, today's generation would have been fully educated, except for a sprinkling of the older generation here or there who would have remained uneducated", he added.

The President said that in the 40 odd years after the country's independence, an important thing like education had suffered from diffused efforts. "First it was primary education, then higher education and research and finally adult education. If there had been concentration in a single direction of educating the children, we would have succeeded", he added.

He said that it was sad that due importance was not given to education by the States because its results would be obtained late. Hence it got a lower priority in comparison to other programmes such as industrialization which provided employment.

Mr. Venkataraman said education did not imply that a person be taught the three Rs; it meant that he should become self-reliant and self-confident in order to earn a livelihood. "To ensure a living during adulthood is to educate children", he added.

He said that unfortunately the system of education introduced by the British was still enforced. "The Britishers wanted clerks, so they established universities where English and the rudiments of service could be taught. A degree was a passport to employment and as such universities became recruitment agencies for jobs and not for widening knowledge and expanding horizons", he added. The President said the attitude had prevailed.

Congratulating the State Government for formulating a time-bound scheme to make the State 100 percent literate, Mr. Venkataraman said that other States in the country should emulate Himachal.

Speaking on the occasion, the Himachal Pradesh Governor, Mr. Virendra Verma, said that to achieve 100 percent literacy in the State by December 1994 was a Herculean task since about 93 per cent of the State's population was scattered in the 19,387 villages over mountainous terrain.

The Chief Minister, Mr. Shanta Kumar, said that the ideal of service to the poor had inspired his government to undertake the arduous task. "We hope to achieve this time-bound programme through the involvement of the people and not government servants", he added.

The Director-General of the Adult Education Programme, Mr. Leela Dhar Mishra, said that Kerala was the first State to achieve 100 percent literacy. "Today 25 districts are 100 percent literate and another 131 are on the threshold", he added.

He said that out of 470 districts in the country, 350 were moving towards achieving 100 per cent literacy and "we hope to see a fully literate India in the 21st century".

BHU Celebrates World Environment Day

A function was organised on the occasion of World Environment Day (June 5,1992) by the Ecology Research Circle and the Department of Botany of Banaras Hindu University. In his welcome remarks Professor J. S. Singh, Head of the Department of Botany, highlighted the importance of World Environment Day. He said that twenty years ago, on 5 June 1972, a historical conference on Environment was organised by the UN at Stockholm, in which many Heads of States, including the late Prime Minister Indira Gandhi participated. Among many things, the conference recognised the fragility of the environment, its global character and identified three major factors, the three Ps responsible for its deterioration :

Population, Poverty and Pollution. Earth was recognised as one system by the Heads of States for the first time. It was also decided to observe June 5 as the world environment day, to inculcate environmental ethics and awareness.

"Earth resource system is also the life support system and disruption in it can potentially disrupt the life on this planet", observed Professor Singh. He also reminded us the facts that "we are still losing tropical forests at a rate of one acre per second, we are losing one species per day from tropical forests alone, 50% of the land in India has been degraded, the closed forest in India now occupies only 11% of the land, all major rivers and coastal waters are heavily polluted, the ambient SO_2 concentration in the industrial belt of gangetic plain is now equal to the concentration level in heavily industrialized zones of the west".

Professor B.R.D. Gupta of Department of Geophysics informed the audience about various mechanisms responsible for causing changes in Earth's climate in the time scale of 20 thousands to 1 lac years. Human induced climate change due to rise in earth warming gases was a major focus of Professor Gupta's talk. "Possible impacts of global warming include melting of permofrost in the arctic region destabilizing manmade heavy structures, more disease spreads in the tropics, and coastal submergence due to sea level rise", Professor Gupta emphasized.

Professor C. M. Jariwala, an expert of environmental law, focussed his talk on role of law in preventing environmental damage. He gave brief chronology of development of Indian Environmental Law. Professor Jariwala stressed on the need for a comprehensive approach on legal problems of environment and commented on the approach of Indian Environment Law which gives a discriminatory punishments to environmental offenders. He stressed that human right to live in a clean environment should be recognised in the constitution. He suggested that a separate centre for Ecology and Environment be established at the BHU.

Professor Lallanji Gopal, Member of the Executive Council, who was the chief guest at the function, highlighted ancient Indian traditions of environmental conservation. "In Indian scripture mountains and rivers are worshipped as gods and goddesses, plants are treated as living beings and any destruction of environment is considered a sin", he said and quoted a hymn from an ancient Indian scripture which says "Earth is my mother and I am son of the Earth." He emphasized inclusion of Nature Study courses in primary school level so that our young generation could have adequate knowledge to appreciate and conserve the natural bounty provided to us by mother Earth.

Academic Counselling in Distance Education

Dr. B.R. Ambedkar Open University is organising a Mobile Training Team National Workshop on Academic Counselling in Distance Education from June 29 to July 3, 1992. The workshop is sponsored by Commonwealth of Learning, Vancouver, Canada.

The objectives of the workshop are (i) to understand the role and the theory of Academic Counselling in distance education; (ii) to develop an awareness of the range of skills required by academic counsellors; (iii) to identify the infrastructural requirements for academic counselling; (iv) to identify student needs in the context of specific programmes and environmental factors; and (v) to identify staff development needs of academic counsellors.

The other sub-themes proposed to be discussed include (1) The concepts and Patterns; (2) The Role of Academic Councellor; (3) Academic Counselling for Science, Technical and Vocational Programme; (4) Identification of Student Feedback Mechanism; and (5) Infrastructure Requirements.

Young Researchers Meet

The first Annual Young Researchers Meet was recently held at the Institute of Education, Devi Ahilya Vishwavidyalaya, Indore. The objective of the Meet was to provide a common platform to the young researchers for discussing latest trends in educational research through individual paper presentation and for sharing their work and experiences with other researchers.

Thirty-one research scholars attended the Research Meet at which twenty-six presentations were made. These related to areas, viz., models of teaching, Creativity, Computer Education, Educational Technology, Literacy Education, Environmental Education, and Guidance and Counselling.

The salient feature of the Research Meet was that all the sessions were conducted by researchers. This provided an opportunity for developing leadership qualities and sense of responsibility. Towards the end of each session, an interaction was arranged between experts and researchers. Experts enlightened the researchers to the latest work in the area of research. It was suggested that a committee be formed to conduct the Research Meet every year at different universities;

experts from different universities be involved; and report along with abstracts of the papers presented be published.

PG Course on Actuarial Science

The Life Insurance Corporation (LIC) will help, it is reported, Kalyani University to introduce a post-graduation course on actuarial science in September this year. According to the Vice- Chancellor of the university, Dr. Kalyan Dasgupta, the course, first of its kind in the country, would comprise financial transactions, insurance and banking operations. The university, he said, had agreed to run the course as there would be great demand for such professionals in the job market.

Moreover, almost all the successful students would be absorbed by the Corporation, Dr. Dasgupta said, adding that "it will be the most job-oriented course in the university".

Stating that LIC would grant Rs.10 lakhs initially for this purpose, Dr. Dasgupta said the university would hold admission tests for graduates with honours in economics, mathematics, statistics and commerce subjects. "We will also allow those who had mathematics as their pass subject in the graduation level," he added.

Technical and Vocational Programmes

Dr. B.R. Ambedkar Open University, Hyderabad, proposes to organise an International Seminar on Technical and Vocational Programmes through Distance Education on 23-25 August, 1992.

The objective of the seminar is to appraise the cross-national experiences of different Universities/Institutions in organising technical and vocational programmes through distance mode.

The seminar will focus on (i) Criteria for the identification of Technical and Vocational Programmes; (2) Curriculum Design; (3) Course Material Development; (4) Teaching/Learning Methodologies; (5) Practical/Project Work; (6) Staff Development; and (7) Interface with User Organisations.

Further information may be had from Prof.V.S. Prasad, Director, International Seminar, Dr. B.R. Ambedkar Open University, Somajiguda, Hyderabad-500482 (A.P.)

PU Makes English, Punjabi Compulsory

Panjab University's language committee is reported to have prescribed English along with Punjabi as a compulsory subject in the B.A. course with effect from the 1992-93 session. A student will have the option to take any other three elective subjects. While the two compulsory subjects will be of 100 marks each, the three elective subjects will be of 200 marks each.

For those who would be exempted from taking Punjabi as a compulsory subject in the B.A. course, the committee decided that "candidates who are not domicile of Punjab, wards of defence personnel, government and semi-government undertakings, who have stayed outside Punjab for not less than 10 years before their admission may take up History and Culture of Punjab in place of Punjabi".

"Students who have not studied Punjabi up to matriculation level at the time of admission may take up History and Culture of Punjab in place of Punjabi. This concession, however, will be available for two years, from the admissions to be made from the academic session 1992-93."

Prize Competition for Children's Literature

National Council of Educational Research & Training (NCERT) has announced the 27th National Prize competition for Children's Literature for the year 1992-93. This competition is organised once in every two years and books/manuscripts in 17 languages are awarded prizes. For this competition the theme is Secularism.

Awards are given for books/manuscripts for two different age groups of children — 5 to 8 years and 9 to 15 years. Prizes will be awarded for 36 books and manuscripts in 17 languages.

The last date for receipt of enteries alongwith the prescribed proforma is 20 July, 1992. Further details may be obtained from the Project Co-ordinator, Dept. of Education in Sources & Humanities, National Council of Educational Research & Training, Sri Aurobindo Marg, New Delhi-110016.

Quality Improvement in Educational Research

The fifth annual conference of the All India Association for Educational Research was recently held at the Department of Education, Shivaji University, Kholapur. The conference focussed on the theme Quality Improvement in Educational Research. Over ninety participants from different parts of the country attended the Meet.

Inaugurating the conference, Prof. K.B. Powar, Vice- Chancellor of the host University emphasised the necessity of encouraging inter-disciplinary and multi-disciplinary researches. Prof. P. N. Sapre in his keynote address deliberated upon the promise and performance of educational research.

News from Agrilcultural Universities

PAU Agrl. College Convocation

Dr. Sukhdev Singh, Agriculture Commissioner, Ministry of Agriculture, Government of India, while delivering the Convocation Address at College of Agriculture, Punjab Agricultural University, said that agriculture had to be treated as business rather than means of livelihood for the farmers. He asked the agricultural graduates to set up private seed industries.

Lauding the tremendous contribution of PAU to national agriculture, Dr. Sukhdev Singh cautioned that there was no need for complacency as many new problems have emerged which need more concerted attention. The bumper rice and wheat crops had added to the problem of proper disposal of crop wastes as its burning had a serious effect on human and animal health, he opined. He said that intensive agriculture had led to serious depletion of principal soil nutrients. Forest cover in Punjab had also declined considerably due to extensive agriculture, he added.

Himself a graduate of the same College, Dr. Sukhdev Singh said that with the frequent use of mass media, the technical requirements of the farmers had changed. They now wanted solution to crop deficiencies and disorders at the spot and expect extension officers to play their role like a medical doctor. He said that he had taken up the issue at national level to introduce the 'Crop Doctor' concept.

Dr. Khem Singh Gill, Vice-Chancellor, who presided, said that for effectively tackling new problems in agriculture there was need to develop new technology. Dr. Gill disclosed that 'Plant Health Clinics' would be established at regional level. He informed that internship programme for agricultural graduates had been approved by the academic council of the University. Referring to the problems of forestry graduates, Dr. Gill assured that there was no dearth of opportunities. He said that all the new programmes take time to make a room for themselves.

Dr. K. S. Aulakh, Dean, College of Agriculture, while presenting the report of the College said that many new courses had been introduced in B.Sc. Agri. (Honours) keeping in view the future needs and latest developments in different facets of agriculture. These include new practical vocational type courses in fish culture, mushroom production and silviculture. He said a special practical course on 'Plant Clinic' had also been introduced.

In the 'Earn While You Learn' projects for the undergraduate students in different agricultural enterprises, Dr.Aulakh said that students have earned profit upto Rs.350 per trimester. He highlighted the achievements of the College in sports, NCC, NSS etc., and several prestigious awards and honours won by the faculty members of the College.

A total of 285 students received their degrees of B.Sc. Agri. (Hons), B.Sc. (Forestry) and B.Ed. for the year 1988-89 and 1989-90. Six gold medals, 3 merit certificates and academic Roll of Honour were also awarded to outstanding students.

Training Course on Storage of Farm Inputs

The Department of Home Science Education and Extension of Punjab Agricultural University, recently organized a five-day State-level training course on "Storage of Farm Inputs and Food Grains" for Women Training Officers/ Demonstrators of Department of Agriculture, Punjab.

Dr. G. S. Gill, Director of Extension Education, PAU, while presiding over the concluding function stressed for the adoption of scientific technology for safe storage of foodgrains and various agricultural inputs.

The participants were apprised of various important agricultural inputs like seed, fertilizer and pesticide, etc. Emphasis was laid on the scientific storage of foodgrains in the modern/improved storage structures like metal bin, Pucci Kothi, etc. while adopting various preventive and curative measures for checking the insect infestation therein.

News from UGC

Countrywide Classroom Programme

Between 1st July to 7th July, 1992 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 1.00 p.m. to 2.00 p.m. and 4.00 p.m. to 5.00 p.m. The programme is available on the TV Network throughout the country.

Ist Transmission

1.00 p.m. to 2.00 p.m.

1.7.92

"Missile Technology: The Systems Concept"

"History of Indian Coinage-I: Coinage Emerges"

"A Conversation on Edible Fungi"

2.7.92

"Consumer Protection"

"Approach to Archaeology"

"Masterpieces in World Literature: Shakespeare: Tempest"

3.7.92

"We, The People....:IX: Indian Legislatures at Work"

"Thomas Mann"

"Environmental Impact: Assessment of a Soap-Stone Mine"

4.7.92

Arts Acre: Vision of a Creative Community-II"

"A Gateway to Americana"

"The Week Ahead"

5.7.92

No Telecast

6.7.92

"Micrometry"

"The Business File: Managing Risk"

"Glorious Past, Uncertain Future"

7.7.92

"Worldnet Dialogue: Advances in Biotechnology-I"

"Education Through Art"

"Drugs: Use and Abuse-II"

IInd Transmission

4.00 p.m. to 5.00 p.m.

1.7.92

"Corrosion-II"

"Urbanisation-I:Process and Planning"

"Pest Story-III"

2.7.92

"Computer Network-II : Principles of Packet Switching Network"

"Techniques of Architectural Sketching"

"The Pied Piper of Wimpole Street-I"

3.7.92

"We, the People... : IV Human Dignity and Fraternity in the Constitution"

"The Angel of Peace"

4.7.92

"A Garden for You – I"

"Setting the World Record"

"The Week Ahead"

5.7.92

No Telecast

6.7.92

"Laser-Raman Spectroscopy"

"Indian Ethos in Management-II"

"Oil Seeds-II : Meeting the Requirements"

7.7.92

"Contract Act-III"

"Innovation : Our Aching Backs"

UGC to Introduce Validation Tests

The University Grants Commission (UGC) proposes to introduce validation test at the first degree and postgraduation level along the pattern of the UGC-JRF test from 1993-94. These tests will be conducted by an identified university in each State through formal, non-formal and open university system.

To start with it will be restricted to some select subjects in which there is pressure on admission. Later, it will be extended to other subjects. Though initially, the financial assistance for conducting such tests will be provided by the UGC, the concerned universities have been advised to evolve some mechanism to make it self-financing.

Admission to postgraduate courses will be made strictly on the basis of performance in such tests and on personal interviews with a weightage of 80 percent and 20 percent respectively. These measures will not only standardise results of all educational institutions in the State, but will also serve as an entrance test for admission to postgraduate courses offered by the university.

Examination Reforms Programme

A committee, set up by the UGC for working out the strategy for the implementation of the Examination Reform Programme, which met on March 24 and May 15, 1992, has recommended the development of a suitable check and balance machinery like collecting syllabi and question papers on a random sampling basis and get them examined by experts.

Those universities and institutions which have not yet implemented the minimum examination reform programme relating to redesigning syllabi and question papers, partly or fully, have been advised to take all steps to implement them within a year. The UGC has pointed out that the implementation of the programme was linked with developmental assistance (specially for quality improvement programme).

For the implementation of the various measures of examination reforms suggested by the UGC from time to time, it has been suggested that the academic staff colleges, in collaboration with the examination reforms units, organise four workshops of three to four days duration each during a year for orienting university and colleges teachers. The Vice- Chancellor and Deans could also be invited to participate in such workshops.

Long-term measures like continuous internal evaluation, development of questions banks, grading system and semester system will be introduced by all autonomous colleges, autonomous university departments and departments which are covered under special assistance programme from the academic session 1993-94 if they have not already been implemented them so far.

Affiliated universities have been advised to take all steps for introducing these long-term measures at the postgraduate level latest by the academic session, 1993-94, and extend it to the undergraduate level latest by 1995-96, so that by the close of the current Plan period, the Examination Reforms Programme is implemented in full force by all universities and institutions at all levels.

should have their first allegiance to the university sector in preference to their State teams. There is a need for effective coordination with National Sports Federations in this regard so as to avoid any confrontation with them.

The proposal of Mahatma Gandhi University to host a Workshop on Management of Physical Education and Sports in Universities and Colleges was accepted in principle. The National Workshop is proposed to be organised, in collaboration with the Association of Indian Universities, sometime in the middle of September, 1992.

Sports News

IUSB Meets at Solan

The Third Annual General Meeting of the Inter-University Sports Board of India was recently held at the Dr. Y. S. Parmar University of Horticulture and Forestry, Solan, under the Chairmanship of Prof. M. L. Lakhanpal, Vice-Chancellor, University of Jammu.

The Sports Board welcomed the new scheme of Grants for Games and Sports in Universities and College announced by the Deptt. of Youth Affairs and Sports, Govt. of India. The Board desired that the universities and colleges should derive optimum benefit from the programmes envisaged in the scheme. It was also noted that a policy paper on sports was being prepared by the Govt. with an emphasis on reversing sliding performance of Indian sportspersons and international sports events.

The Sports Board considered the report of the Sub-Committee constituted by AIU on the promotion of sports amongst women and found the recommendations very useful and productive which if implemented would go a long way to promote sports amongst women at various levels. A proposal to introduce certain new disciplines for women like Weight Lifting, Chess and Squash Rackets at the Inter-University level was also considered. However, it was decided to ascertain the popularity of these games in various universities before incorporating them in the annual calender of Inter-University competitions.

The Sports Board, after due deliberations, adopted the modified Eligibility Rules governing participation of university sportspersons in various Inter-University competitions which would come into effect from the ensuing academic session.

Non-participation of talented university sportsmen, on behalf of Indian Universities teams, in the National Championships also came up for discussion. There was a general consensus that all the eligible university sportspersons

Delhi Lifts Maulana Azad Trophy

Shri R. Venkataraman, President of India, awarded the Maulana Abul Kalam Azad Trophy for the year 1990-91 to the Delhi University on June 20, 1992. Prof. Upendra Baxi, Vice-Chancellor, received the Trophy on behalf of the university.

Delhi University has won the Trophy for the fourth year in succession. It also carries a cash award of Rs. 50,000/- for purchase of sports equipment. The second and third position went to the Guru Nanak Dev University, Amritsar and the Panjab University, Chandigarh who were awarded Rs. 25,000/- and Rs. 10,000/- respectively.

The Maulana Abul Kalam Azad Trophy was instituted in 1956-57 and is awarded every year to the university showing all round best performance in sports.

Human Dimensions of Change

C. P. Thakur*

BL Maheshwari & Dharni P. Sinha, Ed. Management of Change through Human Resource Development. New Delhi, Tata McGraw Hill Publishing Company, 1991. Pp.303. Rs 150.

Societies and economies have experienced change throughout, and India is no exception. Nevertheless, currently the pace of change in the country and its direction are somewhat unusual. Emerging patterns of changes are unprecedented and even discontinuous. Anticipating changes with pedestrian tools and capabilities inheres the risk of reckoning with a range of imponderables. New opportunities and threats, as in the introduction to the volume Maheshwari suggests, take "everybody with great speed and considerable surprise". The decade of 90s appears to be sharply differentiated compared to the previous ones. In order to get the better of such changes it is critical to acquire capabilities to manage change whether at the level of the society, organisation, or an individual. The volume with its 21 papers is designed to cover four themes within the framework of management of change :

(a) Globalization,

(b) growth through expansion, diversification and acquisition,

(c) technical innovation, and

(d) increased competition necessitating better quality and higher productivity.

The uniqueness of the volume lies in anchoring the studies with people as its focus. Human dimensions of change include both the actors in the change process as well as the beneficiaries of such changes. Change is inescapable, as the authors repeatedly observe, and how to cope with the ramifications of changes, with what competencies and systems are analyzed by them. Encouragingly, this is done invariably with the help of empirical data from a wide range of settings.

The range of papers vary from a broad overview to certain specific settings. Maheshwari's paper typically illustrates the overview variety while A. Subbarao's paper 'The New Industrial Relations in an Old Developing Country' is devoted to the specific experience of the TISCO.

Science and technology constitute a key agent in changes of the nineties. The papers devoted to Research and Development, Technology Transfers and related themes by S.K. Gupta, Mahapatra and Menon, Lahiry, Sharif, and Jain through their analyses, have brought richness to the whole volume. Since all changes are directed towards higher productivity it is natural that some papers should have analysed the different aspects of change in relation to productivity. Three papers by Suri, Saeed and Bose and Natarajan have tried to examine productivity in relation to labour management relations. Linking productivity to labour management relations is a familiar theme. But one would have expected a more analytical and richer empirical data based analysis than what the three papers have attempted.

In the process of change, in particular the discontinuous ones, obsolescence of technology, human skills, organisation structure and familiar policy choices are natural. The title of the book encourages the curiosity that individually and collectively these issues could have been analyzed in an integrated and somewhat refreshing way. As a matter of fact, readable language, familiar cliches, notwithstanding occasional stimulating comments, and weak data base by and large characterise this volume. A publication dated February 1991, and devoted to the theme of changes in the nineties, ironically appears largely obsolete in view of the far-reaching changes introduced in India within the package of structural reforms and technological modernization. The authors should have in fairness also anticipated the need for incremental addition to the stock of human capital, the strategy for renewal and re-absorption, as well the intervention strategies combining the macro policy with its micro level implications. A reader of such a volume would expect an identification of the agenda for different actors in the management of change. Nevertheless, a set of readable papers contributed by established professionals is a welcome addition to the literature. One would, however, expect that the National HRD Network would undertake studies and publications based on richer and updated data base with much greater rigorous analysis. A bibliography on the theme would have added to its value for the readers.

**Faculty of Management Studies, University of Delhi, Delhi.*

RESEARCH IN PROGRESS

A list of Research Scholars registered for Doctoral Degrees in Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Agrawal, Jitendra. **Mathematical modelling of blood flow in large and small vessels.** Agra. Dr G C Sharma, Prof and Head, Department of Mathematics, Agra University, Agra.

2. Agarwal, Rekha. **A methematical study of flow of blood and other bio-fluids.** Agra. Dr G C Sharma, Prof and Head, Department of Mathematics, Agra University, Agra.

3. Chaudhary, Sanjay. **On optimal control of queueing systems.** Agra. Dr G C Sharma, Prof and Head, Department of Mathematics, Agra University, Agra.

4. Sheela, R. **Homomorphism theorems of certain classes of regular semigroups with special reference to the class of unit regular semigroups with involution.** Kerala. Dr R Veeramony, Prof, University Department of Mathematics, University of Kerala, Kariavattom.

5. Singh, Shiv Kumar. **On scheduling of machine repair and reliability techniques.** Agra. Dr G C Sharma, Prof and Head, Department of Mathematics, Agra University, Agra.

6. Singh, Usha. **A study of electro magnetic effects on flow of fluids.** Agra. Dr G C Sharma, Prof and Head, Department of Mathematics, Agra University, Agra.

7. Sreekumar, R. **Semi-groups theory.** Kerala. Dr K S S Namoodiripad, Prof and Head, University Department of Mathematics, University of Kerala, Kariavattom.

8. Telveenus, A. **Localisation in group algebra and other not necessarily commutative rings.** Kerala. Dr M I Jinnah, Reader, University Department of Mathematics, Kariavattom.

9. Yadav, Mahadeo Krishna. **A study of non-Newtonian fluids through porous media.** Shivaji. Dr B B Waghmode, Departent of Mathematics, Shivaji University, Kolhapur.

Physics

1. Bindu, S. **Chaos in the plasma sheet of geomagnetosphere.** Kerala. Dr G Renuka, Reader, Department of Physics, University of Kerala, Kariavattom.

2. Bushiri, M Junaid. **Study of crystals using infrared and Raman spectra.** Kerala. Dr V Unnikrishnan Nayar, Prof, Department of Physics, University of Kerala, Kariavattom.

3. Divakaran Nair, M. **Studies of middle atmosphere.** Kerala. Dr S Devanarayanan, Prof, Department of Physics, University of Kerala, Kariavattom.

4. John, Annamma. **Spectroscopic investigations on ferroelectric materials.** Kerala. Dr V Unnikrishnan Nayar, Prof, Department of Physics, University of Kerala, Kariavattom.

5. Mahadevan Pillai, V P. **Vibrational analysis of crystals using infrared and Raman spectra.** Kerala. Dr V Unnikrishnan Nayar, Prof, Department of Physics, University of Kerala, Kariavattom.

6. Puri, Sanjeev. **Study of phenomena following the atomic inner shell photoionisation using energy dispersive x-ray spectrometry.** Panjab. Prof P N Trehan, Department of Physics, Panjab University, Chandigarh and Dr Nirmal Singh, Reader, Department of Physics, Panjab University, Chandigarh.

7. Rajendra Babu, K. **Crystal growth and x-ray structure analysis of molecules.** Kerala. Dr V K Vaidyan, Prof, Department of Physics, University of Kerala, Kariavattom.

8. Rupinder Kaur. **Quark bound states--A detailed analysis.** Panjab. Dr Bindu A Bambah, Department of Physics, Panjab University, Chandigarh.

Chemistry

1. Anupama, Jammula. **Chemical studies and biological activities of plant products and synthesised organic compounds.** H S Gour. Prof V K Saxena and Dr J T Rao.

2. Kiran Bala. **Investigation and characterisation of microemulsion system.** Panjab. Prof R K Dewan, Department of Chemistry, Panjab University, Chandigarh and Dr S K Mehta, Department of Chemistry, Panjab University, Chandigarh.

3. Raminder Kaur. **Studies towards the synthesis of secosterols.** Panjab. Dr Tejvir Singh, Lecturer, Department of Chemistry, Panjab University, Chandigarh.

4. Saluja, Aarti. **Studies towards B-lactams synthesis and antibacterial potential.** Panjab. Dr S D Sharma, Department of Chemistry, Panjab University, Chandigarh.

5. Som Parkash. **Chemical studies of selected terpenoids and related products.** Delhi. Dr S N S Chauhan, Department of Chemistry, University of Delhi, Delhi.

6. Vijay Singh, Avantika. **Studies on aflatoxin carsinogenesis.** Delhi. Dr Ramesh Chandra, Department of Chemistry, University of Delhi, Delhi.

Earth Sciences

1. Anilkumar, P G. **Petrological and geochemical studies of the granites of Peralimala, Kannur District, Kerala State, India.** Kerala. Sri R Krishnanath, Reader, Department of Geology, University of Kerala, Kariavattom.

2. Anilkumar, S S. **Structure of the pre-cambrian rocks in parts of North Kerala.** Kerala Dr V Prasannakumar. Reader, Department of Geology, University of Kerala, Kariavattom.

3. Bhardwaj, Abhinandan. **Geological aspects of environmental degradation due to mining and industrial activites in Kangra and Solan Districts, Himachal Pradesh, India.** Panjab. Prof V J Gupta, Department of Geology, Panjab University, Chandigarh and Prof A K Prasad, Department of Geology, Panjab University, Chandigarh.

4. Sreekumar, S. **Geo-technical and petrological studies of slopes along the Kottayam Kumali Road,Kerala State,India.** Kerala. Shri R Krishnanath, Reader, Department of Geology, University of Kerala, Kariavattom.

5. Syed, Abubagar Ahmad. **Sedimentology of Simla formation exposed in the Kandaghat Kiarighat Chhoasa Region of the Shimla Hills, North Western Himalaya.** Panjab. Dr R S Chaudhri, Department of Geology, Panjab University, Chandigarh.

6. Varma, A Devakumar. **Process and mechanisms in the evolution of the low/medium grade metamorphic rocks with particular reference to amphibolites of Agali area, Palakad District, Kerala State.** Kerala. Sri R Krishnanath, Reader, Department of Geology, University of Kerala, Kariavattom.

Engineering & Technology

1. Balaji, Uma. **Radar cross section of objects of various shapes.** Delhi. Dr A K Sinha, Department of Electronics and Communication, Delhi College of Engineering, Delhi.

2. Bhagat Ram. **Study for the development of speech recognition system using coding techniques.** Delhi. Dr T B N Mishra, Head, Department of Electronics and Communication, Delhi Institute of Technology, Delhi and Dr Abdul Mobin, CEERI, New Delhi.

3. Bisht, Vinod Kumar. **Computation and analysis of ground electrode behaviour in non-homocencus soil and measurement of actual electrode parameters.** Panjab. Dr J K Arora, Panjab Engineering College, Chandigarh and Dr R K Jain, Panjab Engineering

College, Chandigarh.

4. Chhatwal, Harbans Lal. **A study of miniature cry-coolers based on stirling cycle concept.** Delhi. Prof P B Sharma, Principal, Delhi College of Engineering, Delhi and Prof Y V S R Sastry, Department of Mechanical Engineering, Delhi College of Engineering, Delhi.

5. Gabrani, Goldie. **Power and bandwidth efficient modulations.** Delhi. Dr K R Raveendra, Delhi Institute of Technology, Kashmere Gate, Delhi.

6. Kalra, Aditya Mohan. **Studies on the impact of afforestation on water yield and soil loss from a catchment in the lower Himalayan Ranges.** Panjab. Dr S K Goyal, Panjab Engineering College, Chandigarh.

7. Narendra Pal. **Flexural-torsional behaviour of spatial beam-columns.** Panjab. Dr I C Syal, Panjab Engineering College, Chandigarh and P N Godbole, University of Rookree, Roorkee.

8. Saxena, Piyush. **Correlative studies on linear systems and theory and petri nets.** Delhi. Dr D Roy Chaudhary, Department of Electronics and Engineering, Delhi College of Engineering, Kashmere Gate, Delhi.

BIOLOGICAL SCIENCES

Biochemistry

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QUALIFICATION: The minimum qualification for Textile Engineering, Ship-Building and Japanese Language & Literature would be a bachelor's degree in a subject or related field. The minimum qualification in Fine Arts would be a bachelor's degree or a diploma in Fine Arts. For other subjects the minimum qualification would be a Master's degree in the subject concerned or a related field.

ESSENTIAL EXPERIENCE: Except for subjects at S.Nos. 13 and 14 above, after obtaining the prescribed qualifications candidates should possess atleast two consecutive years of practical research/teaching experience as on 1st April, 1992.

NOTE: (i) The following must be attached with the application : (a) Attested copy of the certificate certifying the date of birth; (b) Attested copy of the markssheet of the qualifying exam; and (c) Attested copies of all degree/diplomas/certificates. etc. (ii) Only candidates who secured 60% marks or more at the prescribed qualification are eligible. (iii) Where Grades are mentioned, the candidate must indicate the conversion formula adopted by the University/Institution and should give equivalent percentage of marks. (iv) Equivalent foreign degrees will be considered. (v) Candidates, who have already been abroad for study/research/training for more than six months at a time either on a scholarship or on their own, are eligible to apply only if they have been in India for at least three years after return from abroad. Applications of candidates, who are abroad, will not be considered. (vi) Master's Degree means M.A./M.Sc./M.Tech./M.E. but not M.Phil. or Pre-Ph.D. (vii) Candidates should have adequate knowledge of geographical situation, culture and heritage of India and Japan. (viii) Applications in subject- fields other than those prescribed will not be considered. (ix) Candidates who do not possess the requisite qualifications need not apply. (x) Employed candidates must send their applications through their employers with "No Objection Certificate" otherwise these will not be considered. However, advance applications will be considered provisionally pending sponsorship by employers. Advance application must be completed in all respects. (xi) Applications, which are incomplete, will not be considered. Applications should be strictly according to the Format given below.

Candidates should apply for the above scholarship on a plain paper preferably typed or neatly hand written with a recent passport size photograph, furnishing the following details/particulars to the **Secretary, Deptt. of Education, Ministry of Human Resource Development, ES. 3 Section, W.3 Curzon Road Barracks, K.G. Marg, New Delhi-1, by 10th July, 1992.**

The applications received late will not be entertained.

----------FORMAT----------

Paste recent passport size photograph

1. Name of the Scholarships Scheme : Japanese Govt. Scholarships, 1993
2. Subject (Write any one of the 14 subjects given in the advertisement)
3. Name of the Candidate (in Block letters):
4. Full mailing address :
   (a) Present :
   (b) Permanent :
5. Nationality .
6. Father's Name :
7. Date of birth, age in years and State to which the candidate belongs.
8. Whether a member of SC/ST or a tribal or aboriginal community. If so, give full particulars.
9. Academic record starting from :
   High school/higher secondary

Name of the University/ Board/ Institution	Examination(s) passed	Year of passing	Division/ class with position, if any.	% of marks obtained & position, if any.	Subjects taken

(NOTE: Where there is no Division/Class is awarded and only Grading done, the conversion formula adopted may be given).

10. Details of Professional/Practical Training and Research Experience specifying the period and number of papers published, previous employment with name and date of employment, if any.
11. Nature of the present employment with date of appointment, designation and the name and address of the employers.
12. Have you been abroad? if so, give full particulars of the country and the period. Also mention the year and month of return to India.
13. Proposed programme of study/research/training, specifying :
    i) the work at present engaged in;
    ii) nature and programme of study/research desired;
    iii) future plans/prospects after the proposed studies/ research; and
    iv) how are these related to the technical or economical development of India?

Place :
Date :

(Signature of the Candidate)

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